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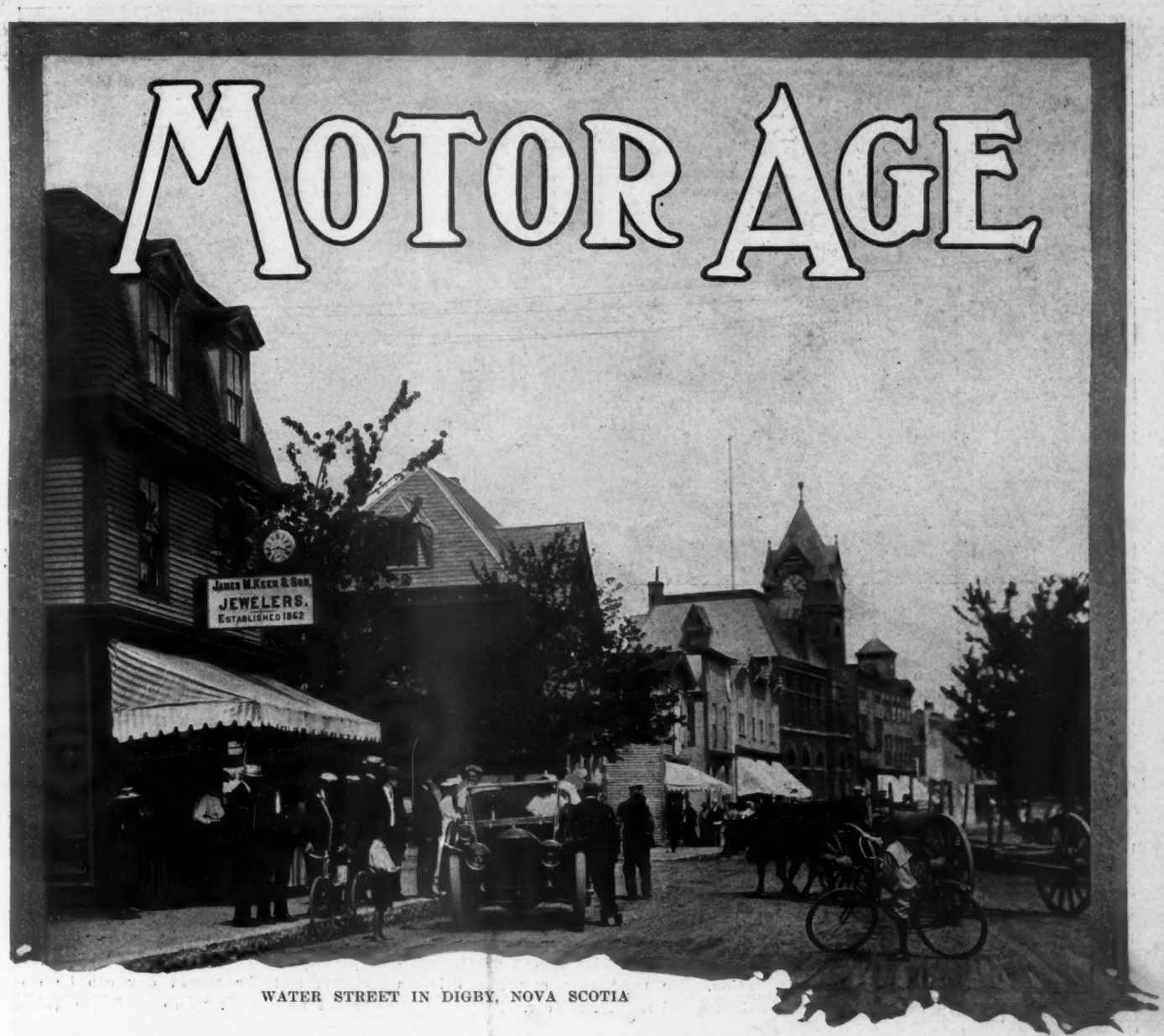
MOTOR AGE



WATER STREET IN DIGBY, NOVA SCOTIA

Motoring in Evangeline Land

By F. B. McCurdy

EVANGELINE land or the province of Nova Scotia, Canada, presents attractions of more than usual interest to the holiday-seeking motorist. Here he does not encounter any monotony of scenery or any long stretches of barren land or uninteresting reaches of country.

Although the roads cannot for a moment be compared for excellence with those which lead through the state of Massachusetts, for instance, still they can be traversed with comparative comfort, and many of the main roads are really excellent. For the most part they are narrow and winding, and the eye of the traveler is constantly being delighted, as he rises to the crown of a hill or rounds a sharp curve, with a vista of pretty scenery, a green meadow traversed perhaps with a winding silvery stream, or a wide expanse of woodland, lake and farm land. Or a snug fishing village with neat white cottages nestling beneath rugged hills, and on the other side a wide expanse of ocean or a harbor dotted with verdant islands.

The broken winter weather in Nova Scotia annually causes extensive damage to the roads. Repairs are done for the most part by statute labor, supplemented by direct assistance from the funds of the provincial government. These repairs usually are made during the month of June, so that motoring in the province can be undertaken most pleasantly after the road work is finished, and during the fine weather which usually prevails during the months of July, August and September.

Gasoline can be purchased at almost any fishing village in the province, at hardware stores in the small towns, and at garages in more pretentious towns, but a good quality of lubricating oil is not obtainable in some of the smaller places, and the motorist always should carry a spare gallon in his car in order to be ready for emergencies.

In order to insure the most pleasant trip, a motorist from the states visiting Nova Scotia should ship his car from

ON THE ROAD TO POINT PRIM IN EVANGELINE LAND

Boston via the Dominion Atlantic Railway Steamship line, whose boats leave Long wharf, Boston, every day, except ing Saturday, at 2 o'clock p. m.

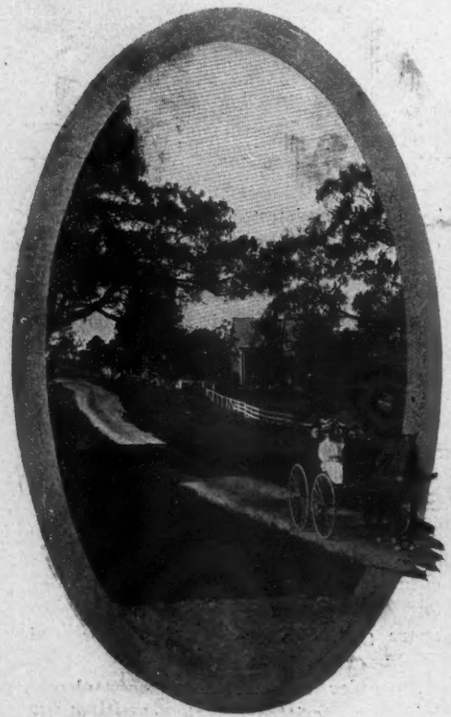
The sea trip from Boston to Yarmouth occupies 18 hours, and the boats consequently will arrive in Yarmouth at about 8 o'clock in the morning. At Yarmouth is the Grand hotel with accommodations for more than 100 guests. Yarmouth, with a population of 6,500, is the home of many retired sea captains and capitalists, whose fortunes were made in the wooden shipping industry, now, with the exception of small coasting vessels, a thing of the past. Its comfortable houses and beautiful hedges are the pride of the residents of the town.

Perhaps the most satisfactory overland route is via Bangor, Houlton and Fredericton to St. John. Or one may ship his car to St. John or to Yarmouth, making the start from either of these places. The tourist entering this part of Canada will, of course, arrange for a bond covering the amount of customs on the machine, which is 35 per cent of the valuation. He must then secure a driver's license and register his car.

Two days can be pleasantly spent on side trips from Yarmouth. The county of Yarmouth contains the best roads to be found in the province of Nova Scotia. The Yarmouth board of trade has prepared a motorists' map of Yarmouth county, outlining the best roads, and the visiting motorist should, on his arrival, obtain a copy of this leaflet for his guidance. He will find it of great value on his trips.

Points of Interest

One day can be spent on a trip from Yarmouth to Pubnico, some 60 miles and return, and the second day can be employed on short runs to Chebogue Point,



STREET IN DIGBY

MOTOR ROUTES IN NOVA SCOTIA AND NEW BRUNSWICK

BEAUTIFUL VIEW OF ST. JOHN RIVER AT EVANDALE

to Carleton and other places. Carleton is some 20 miles from Yarmouth, and on my last run there, about 2 weeks ago, I had the pleasure of seeing a large stag, which stood quietly in the middle of the road until frightened away by the horn.

From Yarmouth to Halifax, 216 miles distant, the capital of the province, and the next objective point, the best road follows rather closely the line of the Dominion Atlantic railway, not far from the south shore of the Bay of Fundy and through the beautiful Annapolis and Cornwallis valleys, famous as the land of Longfellow's Evangeline. Although the journey to Halifax can be completed in 1 day, it is a long run and should be extended over 2 days.

Immediately on leaving Yarmouth, the road continues along the shore of the picturesque St. Mary's bay. By leaving Yarmouth at, say, 9 o'clock in the morning, the motorist may, proceeding leisurely, reach Digby, 65 miles, in good time for luncheon. An excellent road is found through this whole settled shore district, the villages passed including Port Maitland, Meteghan, Church Point, Weymouth and Barton.

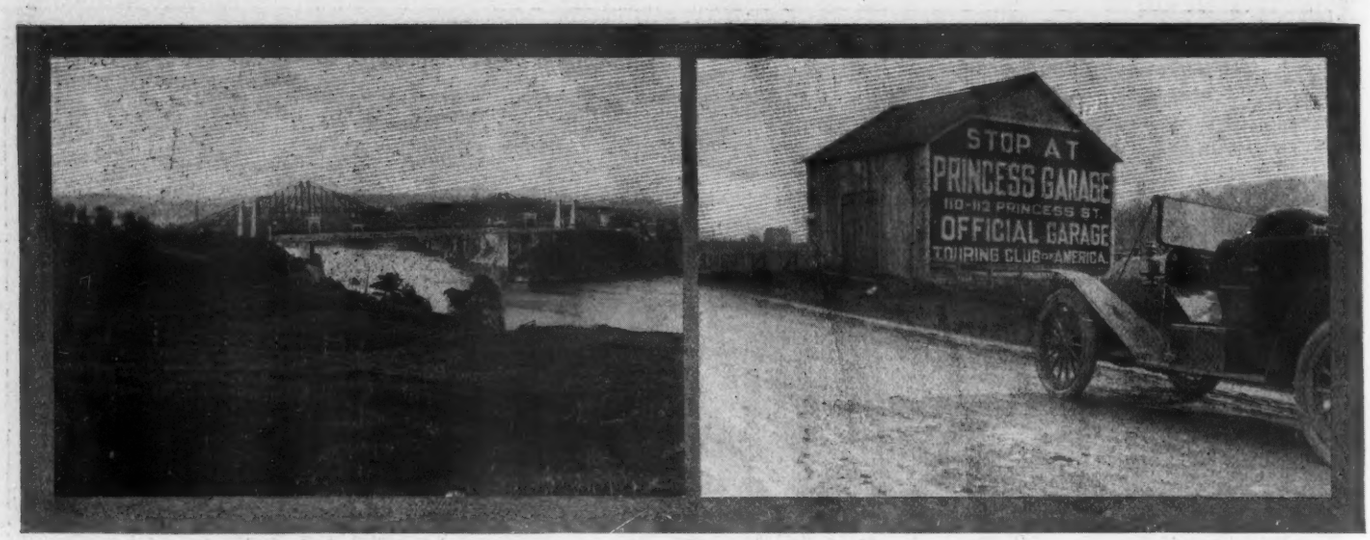
Digby a Summer Resort

Digby, with a normal population of 2,500, is preeminently a summer resort. It is beautifully situated at one end of Annapolis basin, and boasts of a number of summer hotels, wholly given over to the tourist trade. I have very pleasant recollections of luncheons enjoyed at various times at The Pines, about ½ mile distant from the town proper. In the afternoon the journey continues along the shore of Annapolis basin.

Twenty miles from Digby, after passing most picturesque scenery at Clementsport, Deep Brook and other places, through the land of the cherry, the motorist arrives at Annapolis Royal, with a population of 3,000, founded by Sieur DeMonts in 1604,

OLD FRENCH FORT AT ANNAPOLIS ROYAL

REO AT OLD FORT



REVERSING FALLS, ST. JOHN, N. B. TOURING CLUB OF AMERICA KNOWN IN NEW BRUNSWICK

the oldest English settlement in North America. The location of the old fortress is immediately opposite the Queen hotel in the center of the town and overlooking the head of Annapolis basin. Within 2 miles of the town is picturesque Lequille, the site of the first grist mill in Canada. A further run of 29 miles in the afternoon or early evening through Roundhill, Bridgetown, population 2,000, Paradise and Lawrencetown brings you to Middleton, population 1,500.

A View of the Evangeline Country

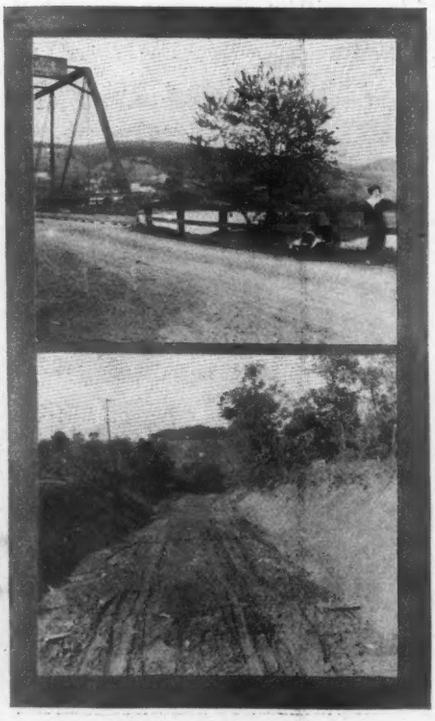
The whole road, from Yarmouth to Middleton, 115 miles, is good. When nearing Middleton the sandy district begins, and the main road after leaving Middleton going east is very sandy. The heavy sand may be avoided by continuing by the north mountain road, which is in good condition, to Aylesford, population 500, where it rejoins the main road about 15 miles from Middleton. At 18 miles from Aylesford is Kentville, population 3,000, and the head office of the Dominion Atlantic Railway. From here a digression from the main road should be made through Church street, Canard, and Canning, population 1,000, to Blomidon. Blomidon is some 600 feet high. A motor car can be driven with comfort to the look-off, from which is obtainable, if the day is fine, a superb view of the basin of Minas, Grand Pre, and the whole Evangeline country. Returning by a different road, luncheon can be had at the Royal hotel, Wolfville.

Leaving Wolfville, the motorist passes through Hantsport, to Windsor, population 3,500. At Windsor is the Church of England Kings' college, established in 1789, also Edgehill, the well-known girls' school, and the collegiate boys' school. From Wolfville to Windsor, 20 miles, the roads are fairly good.

From Windsor to Halifax one has the choice of two roads, namely: the Mount Uniacke road to Halifax, distance 45 miles, but if this road is followed, about 15 miles of very rought road will have to be crossed, from Ardoise hill to Upper Sackville, and it certainly should be avoided. The better, although some 15 miles longer, road is to go from Windsor through Newport, Upper Rawdon, Nine Mile River, to Elmsdale on the line of the Intercolonial railway, thence to Enfield, Wellington Station, Waverley, Bedford to Halifax.

Sightseeing in Halifax

No visit to Nova Scotia will be complete without a day or 2 spent in sightseeing at Halifax, population 50,000, a historic city founded in 1749 and for over a century the headquarters of the British garrison and naval forces. There are many points of interest in Halifax, full particulars of which can be obtained from local guide books. The roads near the city are, generally speaking, rough and stony, with the exception of the road by which the motorist entered, namely, from Elmsdale to Halifax. There is fair hotel accommodation here.



LEAVING HAMPTON ..... AN UNMETALLED ROAD

A good day's run with Halifax as the base can be had from Halifax, via Bedford, Waverley, Wellington Station, Elmsdale, Gay's River, Middle Musquodoboit, Upper Musquodoboit, Dean's, Newton Mills, Upper Stewiacke, and, following the Stewiacke valley to Lower Stewiacke, Shubenacadie, Elmsdale and back to Halifax, which road had been improved by the Halifax Automobile Association. Should the motorist wish to go further afield, he can from Upper Musquodoboit, follow the coach road to Sheet Harbor on the Atlantic coast, and follow the coast as far as Quoddy, Moser's River, or Ecum Secum, and return to Halifax. Among the villages mentioned in this paragraph, really good country hotel accommodation is available at Elmsdale, Middle Musquodoboit, Upper Stewiacke, Sheet Harbor and Moser's River.

Some Rough Roads Encountered

Beyond Ecum Secum the roads to Sherbrooke, although passable, are very rough. The writer has on several occasions during this summer motored from Ecum Secum to Sherbrooke on the St. Mary's river, noted as being one of the best salmon fishing streams in Nova Scotia.

Reaching Sherbrooke, population 800, the good roads begin again, and a delightful drive is from Sherbrooke to Antigonish, 40 miles, with an excellent hotel midway at Lochaber, thence westward through Merigomish, New Glasgow, and along the north shore of Nova Scotia, where the roads are all excellent. From New Glasgow, the motorist may return to Truro, population 6,000, 43 miles, 15 miles bad, and thence to Halifax, 60 miles, or, continuing along the north shore, arrive at Amherst, a busy manufacturing town of 7,000 people, thence to Sackville, N. B., and return to the states, via St. John, either going by steamboat from St. John or following along the Maine coast.

Motor Routes in New Brunswick

By Henry McNair

KENNEBECCASIS should be a word of considerable significance to the motorist touring for pleasure, for the valley of the river of that name is one of the favorite and most picturesque drives out of St. John in New Brunswick, Canada. It extends for about 50 miles northeast and is only one of the many attractive features of the maritime provinces of the great neighbor to the north. Fredericton, Moncton, Halifax, Windsor and Digby are other points of interest. Moncton was named for an English general and is best known for the remarkable tidal bore which comes up the Petitcodiac river twice daily, registering a difference of 30 feet between high and low tide.

Two bits of advice are to be remembered by the motor tourist. Keep to the left after the manner of the English and do not get frisky when encountering the occasional level stretches of gravel road, for they terminate not infrequently in an atrocious culvert. But if one can be content with an average speed of 12 miles per hour and learn to ignore the bumps, the tourist will experience a wonderful historic and scenic trip, which he or she is not likely soon to forget.

From St. John two very interesting round trips offer themselves. The first runs to Moncton, Truro, Halifax and Digby, returning to St. John by steamer or going on to Yarmouth and returning to Boston by steamer. Or one can cross the heart of New Brunswick to Chatham by going first to Fredericton and returning via Moncton. Another plan would be to drive from St. John to Edmundston, ship the car to Cambellton and then skirt the beautiful shore of Baie de Chaleurs and the Northumberland strait to Moncton, then to Halifax and Yarmouth.

Beware of High Speed

All of these roads are passable with no great difficulty, but no great speed should be attempted. Besides the culverts, which try the heart of the stoutest spring, there are the hidden sharp turns

ROCKS AT HOPEWELL CAPE

at the bottom of steep pitches and on high, narrow embankments, which must be approached with caution. Beware also of the stones which stick up in the road. One also encounters in the early part of the season those patent road destroyers which scrape the mud and vegetation out of the gutters into the highway, rendering it well-nigh impassable until friendly showers wash it back again. On the other hand, the tourist occasionally comes across the sane and satisfactory work of a modern road drag, which affords immensely superior travel.

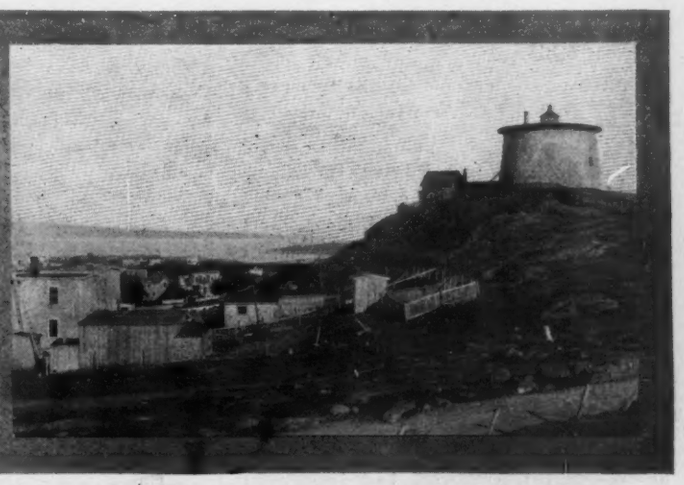
Some are apt to regard St. John at first sight as a dull and dingy seaport, particularly in summer. But it is the largest city and the commercial center of New Brunswick, deriving considerable importance from the fact that it is free from ice the year round. Malaria, hay fever and mosquitoes, it is also boasted, are unknown there. The city derives its name from the fact that Champlain and De Monts visited the harbor on the day of St. John the Baptist, June 24, 1604; but it is familiarly called the City of Loyalists, because its real existence dates from the landing of the United Empire Loyalists in 1783. The Loyalists did not care to be severed from England. Likewise one might remark that General Benedict Arnold lived and carried on business at St. John from 1786 to 1791. Market slip, the landing place of the Loyalists, is one of the points of interest.

Of course, the great feature are the falls, which an American humorist dubbed "reversible." They are made by the tide where the river rushes through a channel 450 feet wide between tall cliffs of limestone, the falls going out at low tide and falling landward at high.

Other Sights to Be Seen

The St. John river is only one of the features of St. John, but the river may well direct the tourist to such objective points as Fredericton, Woodstock, Grand Falls and Edmundston. The Grand falls are next to Niagara in picturesque beauty. Fredericton, the capital of New Brunswick, contains the Parliament buildings, university, and that excellent specimen of pure Gothic—the Church of England cathedral. The road from St. John to Fredericton should be made either by the river road or by the back road, the former being most popular because of its beautiful view of the St. John. From Fredericton the tourist should follow the valley of the Nashwaak river and descend into the valley of the Miramichi, the famous fishing grounds of Canada.

PICTURESQUE NASHWAAK RIVER



MONTELLO TOWER AT ST. JOHN

Hearne Wins Cincinnati Big-Car Race

Fiat Pilot Easily First in Feature Event of Motor Celebration of Completion of Fernbank Dam, Averaging 57.3 Miles Per Hour—Affair is Nonstock and Small Field Competes—Few Accidents Occur and No One Seriously Injured

CINCINNATI, O., Sept. 10—Cincinnati's first attempt at road racing was carried through very successfully Saturday as a climax to the week's celebration of the opening of the Fernbank dam across the Ohio river. The races were run over the Silverton-Blue Ash-Montgomery triangle near the town of Rossmoyne, about 15 miles out of the city. The course was a triangular one with one very sharp turn. The length was 7.9 miles and the road none too well prepared for fast work.

Of the two races, which were run simultaneously, the big one was for a distance of 200 miles, equal to twenty-five laps of the course, and the other was 150 miles, nineteen laps. Eddie Hearne in the Fiat carried off the honors in the 200-mile event, winning the Cincinnati trophy at an average speed of 57.3 miles per hour. Jenkins in the Cole took second in this race at an average speed of 54.53 miles per hour and first in the 150-mile event, to which the Fiat was not eligible. Second place in the smaller race, for the Hamilton County trophy, was made by Thatcher in the Ohio. Hearne wins the $2,000 Cincinnati trophy, a silver cup and $750 cash.

The races did not start till 11:40 o'clock, as they were delayed nearly 1 hour to permit the course to dry. The rains of the early morning had left the sides of the road, outside of a narrow strip, muddy and soft. In front of the repair pits at the starting line was the worst place on the course and it was necessary to start the cars in single file instead of having them lined up by twos, as is the usual method. All of the cars but the Fiat, Westcott and Stutz were entered in both races the position at the end of the nineteenth lap determining the standing in the 150-mile event.

Start of the Races

Of the twelve entries for the two races all appeared at the starting point. But Mortimer Roberts in the Abbott-Detroit, which carried No. 1, showed up at the very last minute. The seating arrangement of the Abbott had been changed so that the mechanic was immediately behind the driver and Technical Executive F. E. Edwards refused to allow the experiment tried with the course in its present condition. The ruling-off of the Abbott-Detroit left twelve starters sent away at 30-second intervals by Starter Wagner.

Things commenced to happen before all the cars had gotten away. No. 11 Stutz, driven by Gil Anderson, had trouble in starting and after desperate work by both driver and mechanic the car had covered 20 feet in the first 15 minutes and was withdrawn. It was found later that a pin or key in the transmission had caught.

START OF CARS IN CINCINNATI ROAD RACES

Two other cars met with disaster in the first lap. The first occurred when Raimey in No. 8 Cino threw a tire and turned over near Blue Ash. Raimey suffered a slightly sprained wrist and the car was out of the race. Then No. 20, Colby, went out with a broken wheel. Pearce, the driver, getting slightly scratched up in the wreck.

In the fifth lap, No. 7 Cino with Andy Burt at the wheel, who had held his position right behind Hearne and was leading in the Hamilton County trophy race, lost its brilliant chance by breaking a connecting rod. The last accident was when the No. 2 Schacht, driven by Jeffkins was wrecked in its eightieth mile. A tire blew out on the left rear wheel where the road was soft and the wheel broke. Both driver and mechanic were thrown out and Wilkie Meyers, the mechanic, received a cut on the leg.

EDDIE HEARNE, FIAT, WINNER OF BIG RACE AT CINCINNATI

Hearne Out in Front

From the beginning of the race Eddie Hearne in the big Fiat, had everything his own way and was not really pushed at any time, finishing 11 minutes ahead of the Cole. Burt, in the Cino, followed Hearne for the first four laps when he was put out with a broken connecting rod. Jenkins in the Cole was in seventh place for the first two laps. Then he commenced to spurt, passing Matthews in the Ohio on the third lap, and Harry Knight in the Westcott on the fifth lap. This put him into second place for the big race and first place in the little race, which position he held to the finish. In addition to his victory Jenkins has the honor of making the fastest lap of the day, negotiating the 7.9 miles in 7:13, an average speed of 65.7 miles per hour. Knight in a Westcott finished the first lap in the fourth place, then climbed up to third when the accident to Burt put Knight in second place for one lap. Jenkins' spurt left Knight back in the third place again until he dropped from third to sixth in the sixteenth lap during a stop for oil, water and gasoline, then he climbed up to fourth place when the with-

Cole a Big Factor in Ohio Road Events

With Jenkins Driving the Hoosier-Made Product Finishes First in Small-Car Race and Runs Second to Fiat in the Long Grind—Westcott, Ohio and Cino Secure Places —Course None too Good, But the Meet is a Well Conducted One

drawal of Thatcher in the Ohio from the big race put him into third place, where he finished.

No. 6 Cino, with Gilchrist at the wheel, started out in the fifth place, dropped back to seventh in the third, and then was boosted to the fourth place by the withdrawal of the Schacht and the No. 7 Cino. In the sixteenth lap Gilchrist passed Knight and landed in fourth place, but was repassed by both Knight and Matthews in the next lap and finished in fifth place.

In the little race, which was decided by the position of the cars at the end of the nineteenth lap, neither the Fiat nor the Westcott was eligible, so that Jenkins in the Cole was leading from the fifth lap, and was closely followed by Thatcher in the Ohio throughout the race. Gilchrist in the Cino ran in third place nearly all the way, and Thatcher immediately withdrew at the completion of the nineteenth lap on account of clutch trouble, declining to attempt to finish in the big race.

Cole Wins Small Race

The Cole came over the line a winner 5 minutes ahead of Thatcher in the Ohio, who was 9:10 head of Gilchrist in the Cino. The latter was spurting desperately on the last lap and was in a fair way to pass Thatcher when a tire was punctured by a spike on the road, but he finished a good third.

With the 150-mile race finished, the five racers continued the 50 miles still left in the 200-mile event. The Fiat was in the lead with the Cole close behind and Gilchrist in a Cino and Knight in the Westcott fighting for third place.

The race was very satisfactory from all points of view with, perhaps, two exceptions: One of these was the rather poor condition of the course, which was not well prepared for speedy work. As this was the first event of the kind it is probable that the promoters will make better road preparations for later events. The road had been well oiled but was very soft in spots, a condition which was aggravated by the rains that occurred that morning. The policing of the track could have been very much improved upon. While there seemed to be plenty of the Ohio militia scattered around the course there were not enough of them at the starting line and their work in keeping the course clear during the races could have been more successful. It was necessary for the announcer on the judges' stand to notify the spectators that there was a car coming in order to awaken the militiamen to their

JOHNNY JENKINS, COLE, WINNER OF THE SMALL-CAR RACE, AND SECOND IN BIG-CAR EVENT AT CINCINNATI

duties. The policing of the course was a difficult affair at best, for both the electric and steam trains from the city discharged their passengers for hours during the races directly upon the side of the course in front of the grand stand, and there was no fence or other means of protection between the tracks and the race course. Not only did it require the utmost work of the guards to keep the track reasonably clear at this point, but the trains also obstructed the view of those on the grand stand. It was only by good fortune that some of the spectators were not killed or seriously injured, as some were running across the track in an irresponsible manner at all times.

Officials Letter Perfect

The work of the starters and timers was perfect, and the general organization of scoring, announcing, flagging, etc., could not have been improved upon. Of course there were not the elaborate preparations made that were in evidence at the more pretentious races at Elgin and Fairmount park, but the arrangements were, with the exception of fencing and policing, adequate for the needs of this meet. A huge

EQUIPMENT OF CARS IN THE CINCINNATI ROAD RACES

No.	Car	Carbureter	Magneto	Tires
2	Schacht	Schebler	Mea	Michelin
3	Cole	Schebler	Bosch	Michelin
4	Ohio	Schebler	Splitdorf	Michelin
5	Ohio	Schebler	Splitdorf	Michelin
6	Cino	Schebler	Remy	Michelin
7	Cino	Schebler	Remy	Michelin
8	Cino	Schebler	Remy	Firestone
9	Fiat	Fiat	Bosch	Michelin
10	Westcott	Schebler	Bosch	Michelin
11	Stutz	Schebler		G & J
20	Colby	Rayfield	Remy	Michelin

OHIO TAKING THE TURN AT BLUE ASH

OFFICIAL RESULTS IN THE CINCINNATI TROPHY RACE FOR NONSTOCK CARS

No.	CAR	DRIVER	BORE	STROKE	TIME	LAP 1	LAP 2	LAP 3	LAP 4	LAP 5	LAP 6	LAP 7	LAP 8	LAP 9
9	Fiat	Hearne	5½	5	Elapsed	8:33	17:02	25:28	33:46	42:10	50:29	59:01	67:11	75:39
					Lap		8:29	8:26	8:18	8:24	8:19	8:32	8:10	8:28
3	Cole	Jenkins	4½	4½	Elapsed	10:56	19:47	28:28	36:56	45:26	53:48	62:09	70:30	78:50
					Lap		8:51	8:41	8:28	8:30	8:22	8:21	8:21	8:20
10	Westcott	Knight	4½	5½	Elapsed	19:01	17:56	26:55	36:00	45:01	53:57	62:52	71:51	80:32
					Lap		8:55	8:59	9:05	9:01	8:56	8:55	8:59	8:41
4	Ohio	Mathews	4 11/16	4½	Elapsed	19:38	18:56	28:34	37:56	47:17	56:21	65:46	80:41	90:42
					Lap		9:18	9:38	9:22	9:21	9:04	9:25	14:55	10:01
6	Cino	Gilchrist	4½	5	Elapsed	19:34	19:00	28:48	38:26	47:57	57:12	66:29	75:59	85:37
					Lap		9:26	9:48	9:38	9:31	9:15	9:17	9:30	9:38
5	Ohio	Thatcher	4 11/16	4½	Elapsed	18:55	18:08	27:53	37:12	46:22	55:39	64:56	74:12	83:28
					Lap		9:13	9:45	9:19	9:10	9:17	9:17	9:16	9:16
2	Schacht	Jeffkins	4½	5	Elapsed	11:44	20:43	30:32	40:06	49:27	58:50	68:11	77:28	Withdrawn
					Lap		8:59	9:49	9:34	9:21	9:23	9:21	9:17	
7	Cino	Burt	4½	5	Elapsed	18:52	17:44	26:46	35:03	Withdrawn				
					Lap		8:52	9:02	8:17					
8	Cino	Raimey	4½	5	Elapsed	Withdrawn								
					Lap									
11	Stutz	Anderson	4½	5½	Elapsed	Withdrawn								
					Lap									
20	Colby	Pearce	4½	5½	Elapsed	Withdrawn								
					Lap									

—Broke wn—Broke n connectin g rod

—Turn ed over

—Brok en wheel

scoreboard satisfied the curiosity of those in the grand stand as to the standing of the cars at the end of each lap and the results were posted within a very short time after each lap was finished.

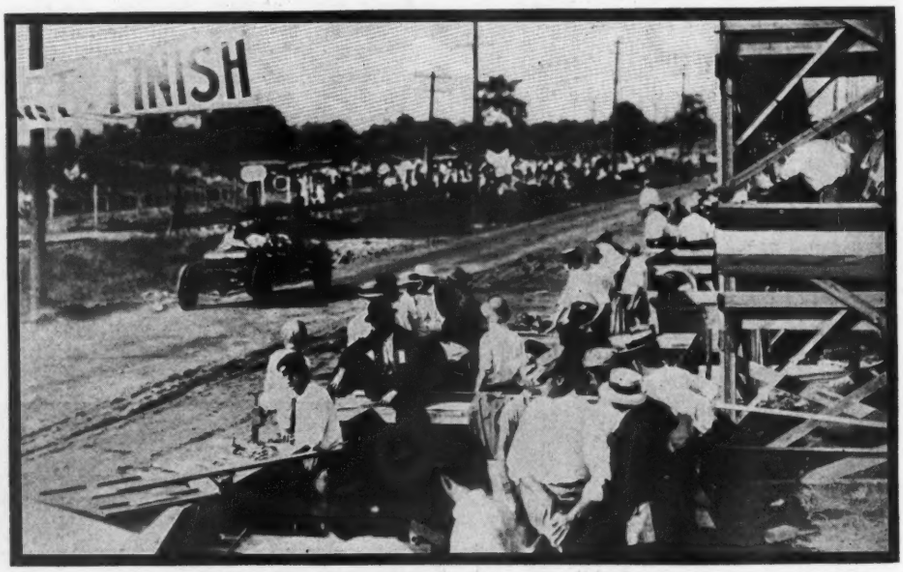
There was one feature of the race that created comments among the officials and that was the lack of stops for repairs, or for taking on gas and oil and water at the pits. There were only five stops at the pits during the entire 4 hours of racing, and only two stops for tire replacement. The first car to stop at the pits was No. 4 Ohio, which halted at the end of the ninth lap, after running 91 minutes, to replace a new tire for the one that had been put on at another point on the course. The next to stop was No. 9 Fiat, which drew up at the end of the eighteenth lap for 3 minutes to take on oil and to tighten up the shock absorbers. The only stop in which gasoline was taken on was when No. 10 Westcott made a 3-minute stay at the pit for oil, water and gasoline in the sixteenth lap. Water was taken on by No. 3 at the end of the twenty-first lap and got away in 1½ minutes. The cause of the delay here was due to the fact that the water in the radiator was very hot and as no funnel was provided at the pit difficulty was experienced in filling the radiator against the pressure of the escaping steam.

The last opportunity the men at the pits had to do any work was when No. 6 Cino stopped to have a tire put in the holders to replace a change made on the right rear.

Minneapolis' Heavy Track

MINNEAPOLIS, Minn., Sept. 10—Burman enjoyed a field day at the state fair racing matinee yesterday. He made the fastest mile of the afternoon, :50 on a far from safe and sane track, was successful in defending his possession of the Remy brassard, and put up a thrilling drive to win the final event of the afternoon, a 5-mile handicap on a soft track.

Heavy rains all week had placed the track in a treacherous condition. The surface appeared to be fairly dry, but below the top coating the fine soil of the track was soft and slippery. Soon after 8 o'clock in the morning, the gates were thrown open, and the police rushed every



NO. 6 CINO PASSING STAND IN CINCINNATI RACES

OFFICIAL RESULTS IN THE HAMILTON COUNTY TROPHY RACE FOR NONSTOCK

No.	CAR	DRIVER	BORE	STROKE	TIME	LAP 1	LAP 2	LAP 3	LAP 4	LAP 5	LAP 6
3	Cole	Jenkins	4½	4½	Elapsed	10:56	19:47	28:28	36:56	45:26	53:48
					Lap		8:51	8:41	8:28	8:30	8:22
5	Ohio	Thatcher	4 11/16	4½	Elapsed	8:55	18:08	27:53	37:12	46:22	55:39
					Lap		9:13	9:45	9:19	9:10	9:17
6	Cino	Gilchrist	4½	5	Elapsed	9:34	19:00	28:48	38:26	47:57	57:12
					Lap		9:26	9:48	9:38	9:31	9:15
4	Ohio	Mathews	4 11/16	4½	Elapsed	9:38	18:56	28:34	37:56	47:17	56:21
					Lap		9:18	9:38	9:22	9:21	9:04
2	Schacht	Jeffkins	4½	5	Elapsed	11:44	20:43	30:32	40:06	49:27	58:50
					Lap		8:59	9:49	9:34	9:21	9:23
7	Cino	Burt	4½	5	Elapsed	8:52	17:44	26:46	35:03	Withdrawn	—Broken con
					Lap		8:52	9:02	8:17		
8	Cino	Raimey	4½	5	Elapsed	Withdrawn	—Turned ov er				
					Lap						
20	Colby	Pearce	4½	5½	Elapsed	Withdrawn	—Broken wh eel				
					Lap						

UNDER 600 CUBIC INCHES AT 200 MILES, WON BY EDDIE HEARNE IN A FIAT

LAP 10	LAP 11	LAP 12	LAP 13	LAP 14	LAP 15	LAP 16	LAP 17	LAP 18	LAP 19	LAP 20	LAP 21	LAP 22	LAP 23	LAP 24	LAP 25	Miles Per Hour.
84:08	91:22	99:24	107:28	115:38	123:55	132:04	140:39	149:27	159:04	167:31	175:59	184:30	192:52	200:45	209:03.20	57.43
8:29	7:14	8:02	8:04	8:10	8:17	8:09	8:35	8:48	9:37	8:27	8:28	8:31	8:22	7:53	8:18.20	
87:12	94:25	102:37	110:53	120:00	128:36	136:47	145:19	154:01	166:29	177:26	186:13	194:38	203:05	211:38	220:04.27	54.53
8:22	7:13	8:12	8:16	9:07	8:36	8:11	8:32	7:42	12:29	10:56	8:47	8:25	8:27	8:33	8:26.27	
88:23	97:14	105:56	114:34	123:11	131:45	153:44	164:56	173:29	182:03	190:36	199:06	207:34	216:03	224:39	233:38.75	51.31
7:51	8:51	8:42	8:38	8:37	8:34	21:59	11:12	8:33	8:34	8:33	8:30	8:28	8:59	8:36	8:59.25	
100:08	109:20	118:39	127:52	137:07	146:38	155:47	164:42	173:34	182:22	191:14	200:04	209:22	218:21	227:19	236:19.58	50.78
9:26	9:12	9:19	9:13	9:15	9:31	9:09	8:55	8:52	8:48	8:52	8:50	9:18	8:51	8:58	9:00.58	
93:56	103:22	112:50	122:29	132:00	141:49	151:24	161:00	170:45	180:29	190:05	204:59	214:22	223:47	233:06	241:59.60	49.58
10:19	9:26	9:28	9:39	9:31	9:49	9:35	9:36	9:45	9:44	9:36	14:54	9:23	9:25	9:19	8:53.60	
91:38	100:46	109:56	118:39	127:35	136:19	145:18	154:27	162:55	171:19	Withdrawn—Transmission trouble.						
8:10	9:08	9:10	8:43	8:56	8:44	8:59	9:09	8:28	8:24							

wr— Wrecked

Mars Meet at State Fair

motor car coming into the grounds onto the track. Then began a long, tiresome milling of motors around the big mile loop. Harrows stirred the soft mud and the process continued until nearly noon when a big gasoline tractors from the exhibits of farm machinery were called into play to pull heavy drags. The surface of the track was pounded down by the machines.

One feature of the meet which interested the spectators was an exhibition of speed driving with a tire change as such changes are made in the big speed events by Ray Harroun with the Marmon Wasp. This change, the taking off of a front tire and the replacing with a new tire, was accomplished in about :50. Harroun then drove out the remaining mile, making the 3 miles and the tire change in a total elapsed time of 4:45. Summary:

Five miles, class C, non-stock, 231 to 300 cubic inches—Jagersberger, Case, won; Heinemann Case, second; no third. Time 5:27.

Five miles, class C, non-stock, 301 to 450 cubic inches—Nyquist, Buick, won; McNay, Cutting, second; Sandell, Firestone-Columbus, third. Time 5:44.

Fifteen miles, class E, non-stock, 300 cubic inches and under—Jagersberger, Case, won; Nyquist, Buick, second; no third. Time 16:25⅘.

Exhibition 3 miles with tire change—Ray Harroun, Marmon Wasp. Time 4:45.

Five miles, class D, non-stock, free-for-all—Burman, Benz, won; Lee Oldfield, Mercedes, second; Kilpatrick, Hotchkiss, third. Time 5:06.

Exhibition mile—Bob Burman, Blitzen Benz. Time, :50⅘. Track record, :49⅘.

Three miles, class D, non-stock, free-for-all open race, best two in three, flying start, for the Remy brassard and trophy—First heat: Burman, Benz, won; Kilpatrick, Hotchkiss, second; Lee Oldfield, Mercedes, third. Time, 3:01⅘.

Second heat—Burman, Benz, first; Lee Oldfield, Mercedes, second; Kilpatrick, Hotchkiss, third. Time, 2:53.

Three miles, exhibition—Ray Harroun, Marmon Wasp, won; Lou Heinemann, Case, second. Time, 3:58.

Exhibition mile, second attempt—Bob Burman, Blitzen Benz. Time, :50.

Five miles, class E, free-for-all handicap—Heinemann, Case, 15 seconds, won; Jagersberger, Case, scratch, second; Nyquist, Buick, 15 seconds, third; McNay, Cutting, 10 seconds, fourth; Sandell, Firestone-Columbus, 30 seconds, fifth. Time, 5:08⅘.

Five miles, class C, non-stock, 301 to 450 cubic inches—Sandell, Firestone-Columbus, won; Nyquist, Buick, second; McNay, Cutting, third. Time, 5:32. Cutting and Firestone each had a 40 second handicap.

Five-mile handicap, free-for-all—Burman, Benz, scratch, won; McNay, Cutting, 40 seconds handicap, second; Jagersberger, Case, 25 seconds handicap, third; Heinemann, Case, 30 seconds handicap, fourth; Kilpatrick, Hotchkiss, 10 seconds handicap, fifth; Nyquist, Buick, 35 seconds handicap, sixth. Time, 4:49⅘.

THATCHER, IN OHIO, SECOND IN SMALL CAR RACE

CARS UNDER 300 INCHES AT 150 MILES, WON BY JOHNNY JENKINS IN A COLE

LAP 7	LAP 8	LAP 9	LAP 10	LAP 11	LAP 12	LAP 13	LAP 14	LAP 15	LAP 16	LAP 17	LAP 18	LAP 19	MILES PER HOUR
62:09	70:30	78:50	87:12	94:25	102:37	110:53	120:00	128:36	136:47	145:19	154:01	166:29.84	54.05
8:21	8:21	8:20	8:22	7:13	8:12	8:16	9:07	8:36	8:11	8:32	7:42	12:29	
64:56	74:12	83:28	91:38	100:46	109:56	118:39	127:35	136:19	145:18	154:27	162:55	171:19.02	52.53
9:17	9:16	9:16	8:10	9:08	9:10	8:43	8:56	8:44	8:59	9:09	8:28	8:24	
66:29	75:59	85:37	93:56	103:22	112:50	122:29	132:00	141:49	151:24	161:00	170:45	180:29	49.78
9:17	9:30	9:38	10:19	9:26	9:28	9:39	9:31	9:49	9:35	9:36	9:45	9:44	
65:46	80:41	90:42	100:08	109:20	118:39	127:52	137:07	146:38	135:47	164:42	173:34	182:22	49.30
9:25	14:55	10:01	9:26	9:12	9:19	9:13	9:15	9:31	9:09	8:55	8:52	8:48	
68:11	77:28	Withdrawn—Wrecked											
9:21	9:17												

necting rod

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The Real Motor Truck Situation

THE motor truck is here today. Some would-be truck dealers and some would-be truck manufacturers keep announcing that "the truck business is going to be a wonderful business," when, as a matter of fact, it is already a great business and the maker or dealer who talks about it going to be big is at least 1 year behind the advance guard of the commercial industry today. Once again, let us repeat, the motor truck is here, right now.

THE facts are the proof. Truck builders who have a genuine product, are behind in orders. A second proof is the fact that there are scores of business houses which would today buy fleets of ten or twenty trucks if they could get the goods to suit them. The business man in a great many of the big industrial companies has at last realized that the horse is doomed. A year or so ago the political-agitator type of truck salesman tried to stampede the buyer with his highly-pitched aphorisms on the all-conquering nature of the truck; he tried to make sales by frightening the prospective buyer into a purchase or go out of business; and he talked in exaggerated sentences on the reliability of the truck, but today this salesman is talking in the same strain and does not know that the truck is here, and that a great many of the business men realize it.

THE truck buyer has come to the dividing of the ways. He is today seeing that horse transportation cannot be compared with motor transportation. He is seeing that he cannot get along without motor transportation. The speed of the truck as compared with that of the horse has made it imperative on him to motorize his transportation system. The truck is quicker in spite of the congestion of the streets with horse-drawn vehicles; and it is a conservative statement to make, that if horse traffic were barred from the congestion zones of a big city, that owing to the extra speed that the trucks would travel at, traffic congestion would be reduced one-half. This fact was demonstrated a few weeks ago in London during the big teamster strike. When the horse-drawn vehicles were taken off the streets, every conceivable form of motor truck was put into commission, and it was proven conclusively that the trucks could operate safely at 20 miles per hour, whereas with the horse traffic a speed of 8 or 10 miles per hour was the maximum.

THE truck maker and the truck dealer must get it out of his mind that the truck business is coming. It is here. Every possible buyer that such a dealer talks with is sure to go away with the impression that the "truck industry is not yet here." Such a buyer will at once come to the conclusion that he had better wait a while until the industry is here before he buys. That stops a sale. It does more: That prospective buyer talks to his neighbor business man, who also may be thinkinig of buying a truck or a delivery wagon. He, also, may decide to wait awhile before buying. The chain of future talk on the truck industry goes on and on. It is a never-ending story and the more it goes the more is the industry injured; the more are sales postponed and the more the industry suffers.

DEALERS and makers, who think that the truck industry is coming and do not know that it is here, should waken. They are asleep; they are drones in the industry. They are hurting the business that they imagine they are in. They should at least keep quiet if they are not convinced in themselves about the industry. The truck that is well made is further advanced today than the driver; it is further advanced than the buyers are in systems of operation. Of the three quantities, the truck, the driver and the owner's system of operation and maintenance, the truck is in the leading position. Scores of the delays in truck service have been due to the driver, but the truck has been blamed. Dozens of cases of breakdowns are blamed on the truck, when if the driver or garageman had been alert to his job he would have noted in advance that trouble was brewing and a minor repair would have averted a breakdown.

WE should do in the motor truck industry the same as we do in other business enterprises in which we have machinery to deal with. A railroad company does not run a locomotive until it breaks down somewhere between Buffalo and Cleveland and where it will be necessary to send out another locomotive to draw the disabled one in; a printing establishment does not allow its linotype or monotype machines to go until they actually break-down and then cause a delay; and in what factory will the machinery men allow the pieces of machinery to go until they break? In all of these cases they watch the machines every day; they have an expert repairman look over them and listen to their operation. If everything is not right the repairman corrects it before a break occurs.

THE truck makers and salesmen and dealers who think the industry is coming should get out of their Sleepy Hollows. They do not know their business. They are allowing the buyer to blame the truck when he is to blame himself; they are allowing him to blame the truck when the driver is at fault; they are allowing him to blame the truck when the streets are at fault; in fact all blame is heaped on the truck, no matter where it belongs. Who ever heard of a railroad company allowing an amateur to take a passenger or even a freight locomotive on a trip on the steel rails; rather the engineer must serve his apprenticeship in the roundhouse and other places. But when it comes to the truck driver, the maker will allow a man to be put on to control his truck simply because he has driven a team of horses for a decade or two. It is preposterous, particularly so when it is remembered that the truck is blamed for it all. The truck maker should protect himself, it is unfair to himself and also to the industry of which he forms a part to allow such criticisms to get out; and it is a great deal worse when the truck maker and dealer and salesman all become a part of such a tale of futurity.

THE truck industry demands study. It demands more study than the pleasure car business required. A man bought a pleasure car at the first for his own pleasure and so was willing to pay almost any reasonable price and expected to have more or less humbug. He was willing to accept all of this for his own pleasure, the ego was in control. It is not so with the commercial car. A man who is a spendthrift in pleasure may drive the closest bargain when it comes to his business; and consequently a business man who owns a pleasure car and never complains about expense will be one of the biggest kickers when it comes to outlay in connection with a truck.

New Yorkers Making Plans for Shows

Busy Winter Anticipated in Gotham With Exhibitions in the Garden and the Palace

NEW YORK, Sept. 13—Space allotments at shows sanctioned by the Motor and Accessory Manufacturers will be made October 7 when that organization assembles in New York. The M. A. M. has sanctioned the garden show of the A. B. of T.; the palace show of the N. A. A. M.; the Boston pleasure vehicle and commercial vehicle shows and the Chicago national show.

The organization now has 222 members and has on file about a score of applications for membership. It is expected that practically 150 of these concerns will have space at the New York shows and about the same number at Chicago. The Boston shows always have a large number of locally-made accessories that are not shown elsewhere, but the indications are that there will not be more than 150 M. A. M. concerns represented at that exhibition.

Drastic action against independent manufacturers who have exhibited unsanctioned shows in the past has not been contemplated and in fact the independents will have a chance to exhibit their wares at the big shows.

The basement of the garden will be used largely by exhibitors who are not members of the M. A. M. and there will also be some space in the galleries for such concerns. There is no reason why those who have exhibited at unsanctioned shows may not take advantage of the open door attitude that exists among the authorities.

While the drawings for space have been made as far as the A. B. of T. is concerned, there are so many alterations to be made in the interior arrangement of the garden that there may be a number of changes in spaces. This matter is now in the hands of the architects and the final arrangement may not be absolutely fixed for several weeks.

The drawing of space for the palace show will take place October 4. It is predicted that this affair will prove the largest and most complete motor car exhibition ever held under the designation palace show. The independents who exhibited at the unsanctioned show last year are eligible for reinstatement or have been reinstated and several of the more prominent companies that took part have applied for space. The rule of the N. A. A. M. was that suspension for 18 months must follow violation of the rule against participation in unsanctioned events, but this rule has been so modified that nobody shall be barred.

The show contemplated by the Automobile Manufacturers Association of America, and which was tentatively scheduled for the palace is shrouded in some uncertainty. Secretary Longendyke and the association has offices at Forty-fourth and Fifth Avenue, but on Tuesday noon when a representative of Motor Age called there, the door was locked and the elevator starter imparted the information that Mr. Longendyke was out of town.

Nothing definite has been announced recently about the show and it is pretty widely rumored that the original date for holding it has been postponed. In the absence of Mr. Longendyke this could not be confirmed.

FAST CHICAGO-BUFFALO RUN

Chicago, Sept 12.—From Buffalo to Chicago, a distance of 647 miles, in 24 hours was the feat accomplished by the 1912 Thomas six 40, driven the greater part of the distance by Elmer Huber, holder of the San Francisco-Los Angeles record. The car carried six persons, two of them prospective customers. It started from Buffalo at midnight Sunday night and checked in at the Stratford hotel, Chicago, at 11 o'clock last night—just twice around the clock, allowing for the difference in time. The drive was arranged by Gaylord Warner, manager of the Chicago branch, and the route ran through Cleveland Norwalk, Fremont, Ligonier, South Bend and Michigan City. Twice the road was lost, which accounts for the big mileage, and the last 50 miles into Chicago was through a blinding rainstorm. Two stops were made to take on gasoline and there were two cases of tire trouble, one a puncture and the other a blowout. The car was delayed 2 1-4 hours at Cleveland waiting to get an extra tire.

GLIDDEN TOUR NEWS

New York, Sept. 13—Complying with the recommendation of the N. A. A. M. the manufacturers' Contest Association has so changed the rules that non-registered cars may take part in the Glidden tour. This change was made at a meeting of the active rules committee last Thursday, which held that in grade 4 events this is permissible.

With the start of the pathfinding Flanders car from this city last Friday, the Glidden tour took on a new air of importance. The car since then has been making good headway and last night had reached Roanoke, Va., on the trip. Two days will be spent at Atlanta, Ga., and Jacksonville, the objective point of the trip, should be reached September 19.

The first day's trip was to Philadelphia; Saturday night Gettysburg was reached; Sunday night the car had reached Staunton, and last night it had reached Roanoke. The roads to Philadelphia are good, the only trouble being the necessity of procuring Jersey licenses. Between Philadelphia and Gettysburg the chief difficulty will be in the toll-gate charges, $4.75 being the maximum amount for a single car between these cities.

Owing to the change of the dates of the tour and its conflict with the 1350 mile reliability run of the Chicago Motor Club it was impossible for David Beecroft, the referee officially selected, to officiate, and P. J. Walker, member of the contest board, San Francisco, Cal., has accepted the position.

To date forty entries have been received. Of these eleven are factory entries made up as follows: Maxwell, three cars; Flanders, three; Metz, three; Halladay, one, and McIntyre, one. The remainder of the entries are private owners who live in Atlanta, Ga., and Jacksonville, Fla.

Atlanta is planning a speedway meet for October 21, the day the Gliddenites are due to reach that city.

WILBY REACHES CHICAGO

Chicago, Sept. 11—Thomas W. Wilby in the Ohio Mud Hen, who is on a 12,000-mile pathfinding tour in the interests of the office of public roads of the department of agriculture at Washington and the Touring Club of America, reached Chicago Saturday, having come from New York. Reporting on the first leg of the journey, Mr. Wilby says: "As for the eastern section of the transcontinental route, I found that New York state is macadamizing the whole of the Albany post road and the Mohawk valley route. When completed they will make a fine system of highways. Ohio hasn't done much yet with its gravel highways and we found very little macadam in Indiana, but the last-named state has some wonderfully straight, broad gravel roads, extending for miles across the level prairie-like country. They would make ideal highways at very little expense and trouble. Indiana certainly would confer a public boon upon motorists if it would puts its road-making machines into operation."

OSTEND ROAD RACE RESULTS

Paris, Sept. 5.—The Ostend road races on September 3 were most successful. Four different events were run off. The mileage covered in three of the events was 207 miles and in the other 248.5 miles. Three of the races were won by Lion-Peugeot cars and the results were as follows: Liederkerke cup, 248½ miles—Winner, Fendu, driver, Veraeren; time, 6 hours 12 minutes 55 seconds. Ostend cup and Williams cup, 207 miles—Winner, Lion-Peugeot; driver, Boillot; time, 3 hours 28 minutes 33 seconds; average 60.8 miles per hour; second, Excelsior; driver, Coosemans; time, 3 hours 55 minutes 55 seconds. Voiturette cup, 200 miles—Winner, Lion-Peugeot; driver, Goux; time, 3 hours 52 minutes 38 seconds.

Enos Trophy Captured by the Oakland

Howard Bauer Makes Perfect Road Score and Only Is Penalized 8 Points in Buffalo Reliability—Flanders Second

BUFFALO, N. Y., Sept. 11—Driven with consummate skill and care by Howard Bauer, an Oakland 40-horsepower runabout won the Laurens Enos trophy, a sweepstakes prize offered for the best score made in the second annual reliability run under the auspices of the Automobile Club of Buffalo on Wednesday, Thursday, Friday and Saturday of last week. The score of the Oakland was perfect on the road, but when Chairman Edwards of the A. A. A. technical committee finished his minute examination of the car Sunday afternoon he discovered that there was a leaky water connection, two bolts loose in the mud apron and two corresponding rivets had worked slightly from their original position; one rivet was found loose in a cross-member and the fan pulley was somewhat loosened. All told, the technical penalties imposed totaled 8 points.

Flanders and Maxwell Prominent

Flanders 4, driven by T. R. Bell from the Studebaker factory was winner of class 1A trophy for runabouts and was second in the sweepstakes class with a road score of 32 demerits consisting of penalties for taking on water out of control, work on the car and lateness at a noon control. This was increased on the final tests by a small penalty for a slipping clutch, four loose bolts, a broken fender and damage to the clutch. This footed up 16 points and made the total penalization 48 points.

Third place in the sweepstakes was awarded to Maxwell 2 with 51 points' penalty. This car won its class trophy in the 3A division. The car was driven by E. G. Gager of the Pittsburgh branch of the United States Motor Co. Taking on water and fuel, adjusting carbureter, lateness at control on the first day and repairing an ignition terminal, caused a penalization of 18 points the first day and taking on gasoline and carbureter work brought 14 points the second day. Three more demerits accrued for taking on fuel the last day of the run, making the total road penalization 35 points. On the finals, the car was given 5 more in the brake tests and some loose rivets, lamp brackets, leaky gasoline connection, loose foot brake, and missing ignition terminal, drew 11 more on final examination.

NO. 4 FLANDERS, CLASS WINNER

BAUER IN OAKLAND, WINNER OF SWEEPSTAKES

The other class winner in the tour proved to be the Lion, the sole entry in class 4A. This car received 113 points during the progress of the tour, all of them originating from a weak left rear spring. The pounding of the first day caused rivets to be loosened in the drip pan and rather than take a penalty for work on the road in making a temporary adjustment which might prove futile any mile of the way, Bloomstrom dropped the pan. This proved effective in checking penalization for 2 days but in the end it was costly. The third day of the tour water dashing up from the road short-circuited the magneto twice and on the final day this tendency manifested itself on the terrific hills that the car lost time and was obliged to proceed at high speed when the roads were level. As a direct consequence of this last pounding, a break appeared in one of the side-members. The car made controls on time but on the final technical it received the stated penalty for such a break and was given 500 points.

Paige-Detroit Withdraws

Paige-Detroit 27, the only entry in class 2A runabout division was withdrawn after suffering from a broken pinion the first day which had to be twice replaced. The withdrawal was made on the last day's run after a penalization of 2243 points had accrued. The Ohio 12 likewise fell out on the last day after a good fight with the fierce hills, its penalization amounting to 1113 points.

Ford 14, a touring car, did not carry its full load on the first 2 days of the run, but was allowed to go on and was examined after the run. Its penalization was 107 points and the matter of its class is still to be determined. Under the rules touring cars may not compete with runabouts and must carry their full loads.

Nine Out of Fifteen Finish

Out of the fifteen cars that faced the starter on Wednesday, nine finished the tour. There were: Maxwell 2 and 10; Flanders 4, Lion 6, Everitt 8, Ford 14 and 21; Oakland 24 and Warren-Detroit 26. Those withdrawn include Maxwell 1, which was disabled in a collision with the Abbott-Detroit racer that accompanied the tour as a non-contestant. The Abbott was also put out by the mishap. The Maxwell suffered a broken rear axle but was repaired in time to complete the tour as a non-contestant. Another chapter of this accident happened immediately after the collision when the Schacht 11 bore down on the disabled car and struck it sidewise with its rear wheel. The Schacht succumbed with a broken axle and also was withdrawn. Two of the Flanders trio were put out on the last day by skidding from the road on the Clarkesburg hill, suffering such injuries as to render their continuance impossible. The Ohio likewise died on the last day in company with the Paige-Detroit, neither of which could negotiate the hills after their mishaps.

Despite these things the tour was a success. Dai H. Lewis, secretary of the Automobile Club of Buffalo laid out a course that might be just a plain ordinary severe test of stock cars under favorable weather conditions. As it developed the test was

Flanders, Maxwell, Lion Class Winners

Endurance Run of a Most Strenuous Character and Results Show Stamina and Power of All of the Contesting Cars

NO. 2 MAXWELL, WINNER IN CLASS 3A, THIRD IN SWEEPSTAKES

FINAL RESULTS IN BUFFALO CLUB'S RELIABILITY RUN

No.	Car	Driver	1st day		2nd day		3rd day		4th day		Total	Road Tests				Tech. Ex.	Penalties Grand Total
			Road	Tech.	Road	Tech.	Road	Tech.	Road	Tech.		Brake	Clutch	Motor	Total		
24	Oakland	Howard A. Bauer.	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
4	Flanders	T. R. Bell	0	3	0	0	0	0	23	6	32	0	5	0	5	11	48
2	Maxwell	E. G. Gager	6	12	0	14	0	0	0	3	35	5	0	0	5	11	51
21	Ford	G. Morton Wolfe	0	0	0	0	0	5	0	43	48	5	0	5	10	15	73
26	Warren-Detroit	J. D. Mohrhardt	0	6	0	1	0	0	0	0	7	41	0	0	41	31	79
8	Everitt	J. W. Gardham	0	27	0	4	0	23	0	5	59	15	0	0	15	12	86
14	Ford	N. Wilkinson	0	19	0	3	0	11	0	19	52	19	0	0	19	36	107
		L. J. Kin etz	0	46	0	58	0	2	0	0	106	5	0	0	5	6	117
10	Maxwell	Thomas Costello	0	11	0	8	0	20	47	27	113	0	0	5	5	508	626
6	Lion	H. L. Blomstrom	Disabled on account of collision								Withdrawn						1000
1	Maxwell	C. F. Monroe															
11	Schacht	E. W. & C. H. Werick	Hit wagon, damaging axle								Withdrawn						1000
3	Flanders	B. W. Scott	0	3	0	0	0	0	‡	‡	Withdrawn						1003
9	Flanders	G. M. Harron	0	0	0	4	0	0	‡	‡	Withdrawn						1004
12	Ohio	E. A. Blaney	0	96	0	3	0	14	...	...	Withdrawn						1113
27	Paige-Detroit	J. E. McFadden	634	314	0	291	0	4	...	...	Withdrawn						2243

‡ Skidded and disabled

about the hardest that American cars have ever been called upon to face, not excepting the famous Glidden tour of 1910. The only possible advantage that the Buffalo cars had lay in the fact that the route was only 855 miles long whereas the Glidden last year was considerably longer.

Buffalo Hill Wrecks Hopes

The first day's run was 207 miles and was laid out over the infamous Buffalo hill. This mountain is of flint and highly polished where the roads are. A heavy rain on Tuesday night washed down upon this flint surface a layer of semi-liquid clay. As the grades were as much as 20 percent in spots, the going may be better imagined than described. On low gear the cars puffed and labored to reach the top and right there they all laid the foundations for their subsequent penalties. All the cars were steaming like locomotives when they forced their way over the top. The noon control was at Bolivar. Here a home-made brand of gasoline was supplied to the column. It tested 70 degrees and several of the cars, especially the two Maxwells that finished the run, experienced difficulties with carburetion after taking on the gasoline. The big cars on a 20-mile-an-hour schedule had considerable difficulty in making control. A detour of 4 miles added a trifle to the route but due allowance was made for it.

The second day's running was not so trying and all the cars that were on their feet at the start completed the 200-mile schedule to Dansville and return.

Third Day Longest Run

The third day was the longest run of the four, extending to Warren, Pa., and return, making the mileage 222, counting detours resulting from washed out bridges. On this run the cars passed through a stretch of mountain country beyond Bradford, Pa., and extending to Warren that is not equalled for scenic beauty in the eastern portion of the United States. Those who enjoyed it declare that this stretch of road has no peer in the world. The route wound through the canyons of the Alleghanies, traversing woodland and crag over splendid roads.

The afternoon trip back to Buffalo was through the Iroquois reservation, where the roads were execrable owing to washout, and detours had to be made in several places. At Levant the bridge was out and all the cars had to deploy through a meadow. The pacemaker, a Pierce-Arrow, broke through the sod and lay helpless in the swamp until the official car, a Thomas six, pulled it out with a log chain, assisted by an anemic team of horses and a dozen passengers on the tour. It was here that the Lion took up the pacemaking and it is probable that the extra strain on the car may have had something to do with the breaking of its side-member. Dickenson Brothers, vineyardists, pleasantly surprised the tourists beyond Levant by pushing baskets of delicious Concord grapes into the hands of the tourists as the cars passed their vineyard.

Last Day a Terror

The final day of the run was a terror. Dai Lewis had laid out a route 207 miles long, but which was stretched to about 211 by detours. The morning run was over Boston hill and Clarkesburg mountain by a road that has not been climbed by a horse in 40 years, according to local reputation.

As careful and experienced drivers as Bauer, Gardham and Gager declare that the grade is in excess of 30 per cent and is the heaviest and worst they ever attempted. One or two more hills like these would have put out the whole caravan.

The brake and clutch test was conducted Sunday morning on Cherry street, Buffalo,

WARREN-DETROIT WHICH FINISHED

HUPMOBILE ON IROQUOIS RESERVATION THE THIRD DAY

the Everitt and Warren entries suffering considerably and all the cars being severely tried on an asphalt pavement.

From 2 o'clock in the afternoon until dark, Chairman Edwards and his assistants labored on the nine cars that finished the run. Such an examination is a rare experience in reliability tours. Every nut and bolt was carefully scrutinized and if anything got away from their observation it would be exceedingly hard to discover.

The sweepstakes winner finished apparently in perfect condition and throughout the entire tour was driven with intelligence and skill. Rarely indeed was the car called upon to take an excessively fast pace, despite the long, fast schedule it was obliged to observe. Bauer saved his car on the hills and made up on the good stretches of road and the car sustained his efforts.

The new special Maxwells did nicely throughout except for carbureter troubles that followed the use of the high-test gasoline. The winning Flanders made a gallant showing under the hand of a remarkably competent driver. The Ford pair finished strongly and satisfactorily, despite the fact that both were penalized as a result of the terrible strains of the hills.

The tour was an undoubted success of its kind and was well administered by the officials.

SOCIAL RUN AT SPRINGFIELD

Springfield, Mass., Sept. 11.—The Automobile Club of Springfield on Wednesday will hold its third annual social and reliability run starting from the Worthy hotel on Main street about 9 o'clock and then following the trail of confetti which will be laid by a pathfinder car to what is known as Riverside park on the shores of the upper Connecticut river. In order to add some real spice of competition to the run the contestants will be required to average 15 miles on hour for the first hour and 20 miles for the second hour. All along the route to Riverside park will be situated several secret controls and each entrant will be furnished with a card on which the time of his arrival at each control will be marked and when he finally reaches the end of the run the contest officials will collect the same and after inspecting them will award the prizes. A light luncheon will be served to the members of the club and those who participated in the run at Riverside park after which an entertainment specially arranged for will be given and which will be followed by some athletic games.

OFF ON OMAHA RUN

Omaha, Neb., Sept. 11.—The cars entered in the endurance run of the Omaha Motor Club, for the World-Herald trophies, will leave at 6:30 a. m. tomorrow morning, to start out on the 4-day contest. This is the third and the longest World-Herald tour, and is a dedicatory run over the newly improved North Platte route from Omaha to Colorado. It is an all-Nebraska tour, the cars being in the confines of this state the entire time. The total mileage is 656.9 miles.

The run was originally set for September, 6-9, but owing to the fact that a large number of the dealers who had entered cars had exhibits at the state fair, last week, it was postponed until September 12. There will be at least twenty-two cars

TABLE SHOWING THE DAILY PENALTIES AND THE RESULT OF THE

SEPTEMBER 6

1—Maxwell—		
Disabled on account of collision and withdrawn.		
2—Maxwell—		
Six minutes late arriving at noon control	6	
Motor stop for gasoline	3	
Motor stop 4 minutes for work on magneto	4	
Five minutes work draining carbureter and inspecting feed pipe	5	
		18
3—Flanders—		
Taking on water outside of controls	3	3
4—Flanders—		
Taking on water outside of controls	3	3
6—Lion 40—		
Taking on water outside of controls	3	
Work on drip pan	4	
Work on drip pan	2	
Work on drip pan	2	
		11
8—Everitt—		
Eleven minutes work on carbureter	11	
Motor stop 13 minutes	13	
Taking on gasoline outside of controls	3	
		27
9—Flanders—		
Clean record		0
10—Maxwell—		
Motor stop 7 minutes	7	
Taking on water outside of controls	3	
Fifteen minutes' work on carbureter, two men	30	
Work on carbureter, 2 minutes	2	
Work on carbureter, 4 minutes	4	
		46
11—Schacht—		
Hit wagon, damaged axle and withdrawn.		
12—Ohio 40—		
Motor stop 6 minutes	6	
Taking on water outside of controls	3	
Taking on oil	3	
Motor stop, 6 minutes	6	
Motor stop 25 minutes	25	
Putting kerosene oil on clutch.	3	
Taking on gasoline	3	
Taking on gasoline	3	
Work on clutch, 13 minutes	13	
Work on carbureter, 1 minute.	1	
Taking on oil	3	
Taking on water	3	
Taking on gasoline	3	
Taking on oil and water	6	
Motor stop 12 minutes	12	
Taking on oil	3	
		96
14—Ford—		
Taking on water	3	
Taking on water	3	
Stop 4 minutes 50 seconds to put in new spark plug	10	
Taking on water	3	
		19
21—Ford—		
Clean record		0
Clean record		0
24—Oakland—		
26—Warren-Detroit—		
Six minutes work putting carbide dust on clutch	6	6
27—Paige-Detroit—		
Work on car putting in new parts, one man 15 minutes, two men 142 minutes	314	
634 minutes late arriving at night control	634	
		948

SEPTEMBER 7

2—Maxwell—		
Taking on gasoline	3	
Taking on gasoline	3	
Motor stop	3	
Work on carbureter	5	
		14
3—Flanders—		
Clean score		0
4—Flanders—		
Clean score		0
6—Lion—		
Work on drip pan, 1 minute	1	
Work on drip pan, 3 minutes, 2 men	6	
Work on drip pan, 1 minute	1	
		8
8—Everitt—		
Four minutes work on carburetor	4	4
9—Flanders—		
One and three-fourths minutes replacing spark plug	4	4
10—Maxwell—		
Taking on gasoline	3	
Taking on gasoline	3	
Motor stop, one man working 10 minutes; one man working 12 minutes	22	
One and one-half minutes work on gasoline line	2	
Motor stopped 13 minutes. One man working 13 minutes; one man 12 minutes	25	
Taking on gasoline	3	
		58

entered in the contest, and more are expected. At the present time it looks as if thirty would start.

The run the first 2 days is over the North Platte route. The stop the first night is at Grand Island, 141.9 miles from Omaha, and the second night at North Platte, 168 miles farther. Judges will go on this trip who will decide what county and what township have the best stretch of road. In making their decision, they will take into consideration the amount of improvements made this year. Prizes of $500 and $300 respectively are to be given to the county and the township having the best road.

Returning, the cars will come back over the North Platte route to Kearney and then strike across to Hastings, the day's run being 174 miles. From here the South Platte route is followed to Omaha, going through Lincoln, the last days run being, 172.4.

FORD CLIMBING CENTER HILL IN BUFFALO RUN

MOLINE GETS NO. 1

Chicago, Sept. 11—So great was the demand for No. 1 in the fifth annual reliability run of the Chicago Motor Club, scheduled for October 6-13, that it was necessary to hold a drawing Saturday to see which car would get it. The Moline Automobile Co., which has made four entries in the tour, drew it and the two Moline touring cars will carry Nos. 1 and 2. The Case will be No. 3 and the Lion No. 4. There being only the Moline entries in the roadster division they necessarily get Nos. 100 and 101. More entries are expected this week, the Oakland, Halladay, Flanders, Imperial, Herreshoff, Abbott-Detroit, Everitt, and Moon being among those counted on as sure starters.

FINAL TECHNICAL EXAMINATION IN BUFFALO RELIABILITY RUN WON BY THE OAKLAND

12—Ohio 40—
Three minutes' work on steering post ..... 3 — 3

14—Ford—
Taking on water..... 3 — 3

21—Ford—
Clean score ..... — 0

24—Oakland—
Clean score ..... — 0

26—Warren-Detroit—
Letting down spring on carburetor, 18 seconds ..... 1 — 1

27—Paige-Detroit—
Work on rear wheel, 7 minutes 7
Work on rear wheel, 2 minutes 2
Work on rear wheel, 23 minutes 23
Work on rear wheel by outside help, 23 minutes..... 46
Work on rear wheel, 71 minutes 71
Work on rear wheel by outside help, 71 minutes.....142
— 291

SEPTEMBER 8

2—Maxwell—
Clean score ..... — 0

3—Flanders—
Clean score ..... — 0

4—Flanders—
Clean score ..... — 0

6—Lion 40—
Work on magneto, 20 minutes. 20 — 20

8—Everitt—
Skidded into another car in the mire and bent spindle; 23 minutes work on same..... 23 — 23

9—Flanders—
Clean score ..... — 0

10—Maxwell—
Two minutes adjusting fan belt 2 — 2

12—Ohio 40—
Taking on water, 3 minutes... 3
Taking on oil..... 3
Five minutes work cleaning radiator 5
Taking on water..... 3
— 14

14—Ford—
Taking on water..... 3
Taking on water..... 3
Taking on water..... 3
Taking off and putting on radiator cap 2
— 11

21—Ford—
Five minutes work on radiator rod ..... 5 — 5

24—Oakland—
Clean score ..... — 0

26—Warren-Detroit—
Clean score ..... — 0

27—Paige-Detroit—
Four minutes work on valves... 4 — 4

SEPTEMBER 9

2—Maxwell—
Taking on gasoline..... 3 — 3

3—Flanders—
Skidded into gully going down hill and run into by car No. 9, severely bending front axle and springing rear axle. Withdrawn.

4—Flanders—
Taking on water..... 3
Three minutes work cutting notch in floor board..... 3
Twenty-three minutes late arriving at noon control..... 23
— 29

6—Lion 40—
Nine minutes putting block under right front frame..... 9
Motor stop, 9 minutes..... 9
Taking on water..... 3
Five minutes replacing lock under front frame..... 5
Motor stop 1
Forty-seven minutes late arriving at noon control..... 47
— 74

8—Everitt—
Taking off and putting on radiator cap 2
Putting dope in grease cup... 3
— 5

9—Flanders—
Withdrawn.

10—Maxwell—
Clean score ..... — 0

12—Ohio 40—
Withdrawn.

14—Ford—
One minute putting in new spark plug 2
Five minutes adjusting spark coil 5
Taking on water 3
Taking on water 3
Taking on water 3
Taking on water 3

21—Ford—
Motor stop 5 minutes..... 5
Motor stop 4 minutes..... 4
Motor stop 2 minutes..... 2
Motor stop 26 minutes..... 26
Taking on oil and water..... 6
— 43

24—Oakland—
Clean score ..... — 0

26—Warrent-Detroit—
Clean score ..... — 0

27—Paige-Detroit—
Withdrawn.

FINAL TECHNICAL EXAMINATION

2—Maxwell—
Lamp bracket broken..... 5
Broken magneto terminal..... 2
Leaky gas connection..... 1
Lamp bracket loose..... 2
One rivet loose..... 1
Foot brake 5
— 16

4—Flanders—
Two lamp brackets loose..... 4
Two mud apron bolts loose.... 2
Broken fender 5
Clutch 5
— 16

6—Lion—
Broken frame member.....500
Lost mud apron..... 8
Cylinder missing 5
— 513

8—Everitt—
Lamp bracket loose..... 2
Broken fender 5
Two pan bolts lost..... 4
One pan bolt loose..... 1
Emergency brake 15
— 27

10—Maxwell—
Leaky radiator 1
Leaky gasoline line..... 1
Two loose rivets in cross member 2
Loose shock absorber..... 2
Foot brake 5
— 11

14—Ford—
Loose muffler 2
Eight nuts loose..... 8
Loose nut on strut rod..... 1
Broken strut rod..... 25
Emergency brake 19
— 55

21—Ford—
Fourteen rivets loose in motor support 14
One rivet loose on cross member 1
Emergency brake 5
Motor missing 5
— 25

24—Oakland—
Leaky water connection..... 1
Two mud apron bolts loose... 2
Two mud apron rivets loose... 2
One rivet in cross member loose 1
Loose fan pulley..... 2
— 8

26—Warren-Detroit—
Loose spring horn..... 15
Spring clip broken..... 15
Muffler wire broken..... 1
Foot brake 2
Emergency brake 39
— 72

Exciting Sport on Old Orchard Beach

Rutherford in National, and Disbrow in Pope-Hartford, Divide Honors in 3 Days of Racing—Records Made Will Not Be Allowed, Because Course Was Not the Required Length

OLD Orchard, Me., Sept. 6.—Exciting sport was witnessed and fast time made in the 3-day beach meet held here, and which finished today. Unfortunately for the drivers the time made will not stand as record owing to the wrong placing of the marker designating the easterly limit of the supposed 2½-mile course. The official to whom was assigned the task of placing the marker fell shy of the required distance by a considerable number of feet. Although the difference was slight it was sufficient to nullify any possibility of official recognition of any records that may have been made.

The feature of the meet was the bitter struggle today for the honors in the 100-mile race between John Rutherford, in a National, and Louis Disbrow, driving a Pope-Hartford. The former won the long grind in the fast time of 1 hour 38 minutes 4-5 seconds, finishing 1 minute 17 1-5 seconds ahead of his rival. Had it not been necessary for Disbrow to stop during his fifty-first mile to replace a lost tire—an operation that cost him fully 3½ minutes—it is quite probable the finish would have been of the blanket variety.

The National took the lead at the start, but in the tenth mile the Pope-Hartford swung into the lead, which it held until Disbrow came to grief in the fifty-first mile. Rutherford led from that point to the finish, although the Pope-Hartford cut a trifle off its opponent's advantage with each circuit. The time of the two contenders for each 25 miles was as follows:

Miles—	25	50	75	100
National	22:36	45:12	65:35	98:00⅘
Pope-Hartford	22:15	44:28	69:38	99:18

The time would have been much faster had it not been for the incoming tide, which drove the contestants farther up on the beach, where the going was much too soft for the fast work which had characterized the earlier stages of the race.

Besides the National and the Pope-Hartford there were four other starters—Pope-Hartford, driven by C. L. Bowler; Inter-State, Harry Endicott; Buick, C. G. Jessup, and Jackson, Harry Cobe. Bowler finished third in 109:37, and Endicott fourth in 110:37, the former getting the show position despite the fact that he covered the last few miles of the race on three tires. Jessup and Cobe failed to finish.

The 25-mile free-for-all was a sop to Disbrow, however, for he nosed out Rutherford by the small margin of 1 second, covering the distance in 15:25. The Jessup Buick finished third, followed by Bowler's Pope-Hartford and Endicott's Inter-State.

A match race at 10 miles between an Inter-State driven by Neilson and a Cole 30 piloted by Habich resulted in a win for the former in 7:56 1-5, his opponent finishing 1-5 second behind.

In a mile exhibition against time a Stanley steamer driven L. F. N. Baldwin negotiated the distance in :39, lowering his best previous effort by an even second. A 5-mile trial by Disbrow in his Pope-Hartford was clocked in 3:58. Summary:

25-MILE FREE-FOR-ALL

Car	Driver	Time
Pope-Hartford	Louis Disbrow	15:25
National	John Rutherford	15:26
Buick	G. C. Jessup	15:26⅕
Pope-Hartford	C. L. Bowler	15:36⅕
Inter-State	Harry Endicott	15:39⅕

MATCH RACE, 10 MILES

Inter-State	V. A. Neilson	7:56⅕
Cole 30	H. J. Habich	7:56⅘

ONE MILE EXHIBITION AGAINST TIME

Stanley steamer	L. F. N. Baldwin	:40

FIVE-MILE EXHIBITION AGAINST TIME

Pope-Hartford	Louis Disbrow	3:58

50-MILE FREE-FOR-ALL

National	John M. Rutherford	30:06⅕	
Pope-Hartford	Louis Disbrow	30:13⅘	
Pope-Hartford	C. L. Bowler	30:40⅕	
Inter-State	Harry Endicott	.....	
Jackson Flyer	Harry Cobe	.....	

100-MILE FREE-FOR-ALL

National	John Rutherford	98:00⅘	
Pope-Hartford	Louis Bisbrow	99:18	
Pope-Hartford	C. L. Bowler	109:37	
Inter-State	Harry Endicott	110:37	
Buick	G. C. Jessup	.....	
Jackson Flyer	Harry Cobe	.....	

In the 25-mile race on Tuesday, Louis Disbrow, in his special Pope-Hartford, nosed out Rutherford in his National, in the last 500 feet of the route, and won in the remarkable time of 15:25. The last event of the day, a race of 50 miles, was won by Rutherford, in his National, in 30:06 1-5. Summary:

MILE EXHIBITION AGAINST TIME

Car	Driver	Time
Stanley	L. F. N. Baldwin	:40

FIVE-MILE EXHIBITION

Pope-Hartford	Louis Disbrow	3:58

TWENTY-FIVE MILE FREE-FOR-ALL

Pope-Hartford	Louis Disbrow	15:25
National	John M. Rutherford	15:26
Buick	G. C. Jessup	15:26⅕
Pope-Hartford	C. L. Bowler	15:36⅕
Inter-State	Harry Endicott	:54

MATCH RACE TEN MILES

Cole 30	V. A. Neilson	7:56⅕
Inter-State	H. J. Habich	7:56⅘

FIFTY-MILE RACE, FREE-FOR-ALL

National	John M. Rutherford	30:06⅕	
Pope-Hartford	Louis Disbrow	30:15⅘	
Pope-Hartford	C. L. Bowler	30:40⅕	
Inter-State	Harry Endicott	.....	
Jackson Flyer	Harry Cobe	.....	

The first day's races were thoroughly successful and well contested. In the 10-mile contest there was a tough fight for honors. Rutherford's National 40 finally won out. He got the lead at the start and maintained it throughout the route, though he was hard pressed by Louis Disbrow in the Pope-Hartford. The time of the winner was 6:15.

In the mile time trials Baldwin, in his Stanley steamer, covered the course in :42, which was the best time. Rutherford closely approached him with a 47-second mile.

The really best time of the day was made by Louis Disbrow, in his Pope-Hartford, in an exhibition 5-mile event. He covered the distance in 3:03, which was at the rate of better than 98 miles an hour. Rutherford, in the 10-mile free-for-all, did the course at the rate of 96 miles an hour. Summary:

SPECIAL MATCH RACE, 5 MILES

Car	Driver	Time
Cole 30	Henry J. Habich	8:04
Chalmers-Detroit	N. A. Mitchell	8:56

EXHIBITION, 5 MILES FOR RECORD

Pope-Hartford	Louis Disbrow	3.03

FREE-FOR-ALL, ONE MILE, TIME TRIALS

Stanley steamer	L. F. N. Baldwin	:42
National 40	John M. Rutherford	:47
Buick 17	G. C. Jessop	:54
Inter-State	Harry Endicott	:54
Pope-Hartford	C. L. Bowler	:57

CLASS D, FREE-FOR-ALL, 10 MILES

National 40	John M. Rutherford	6:15
Pope-Hartford	Louis Disbrow	6:23
Pope-Hartford	C. L. Bowler	.....
Inter-State	Harry Endicott	.....

EXHIBITION MILE

Stanley steamer	L. F. N. Baldwin	:44

MILWAUKEE TALKS SHOW

Milwaukee, Wis., Sept. 12.—Preliminary plans for the 1912 show in the Auditorium were discussed at a meeting of the Milwaukee Automobile Dealers' Association last night. The association held its first show in January of this year and made it a great success in every way. It was the third show to be held in Milwaukee, the Milwaukee Automobile Club having managed the first two. While the club dropped its plans for a third annual exposition last January when the dealers' association came forward, it is possible that the M. A. C. will resume next January or February.

The dealers voted to make a gift of $1,000 in gold to the widow of Walter Donnelly, who lost his life when his Cino car went through the fence at State Fair park last June. The meet was held under the auspices of the M. A. D. A.

To help the good roads boom along, two donations amounting to $1,000 were made by the association. Five hundred goes to the Oconomowoc-Milwaukee Good Roads Association, which is improving the main thoroughfare from Milwaukee to the Waukesha county lake region. The other $500 will be expended by the Milwaukee-Chicago Road Association, which is improving the main highway between Chicago and Milwaukee.

MOTOR DISPLAY AT BADGER FAIR

Milwaukee, Wis., Sept. 12.—Milwaukee motor car, motor, parts and accessory factories were well represented at the big industrial exposition held in the Auditorium, Milwaukee, from September 2 to 12 under auspices of the Merchants and Manufacturers Association in commemoration of the fiftieth anniversary of its organization. The exhibits were confined to Milwaukee-made products and it was the first time an exposition of this kind was held in Milwaukee, which now ranks as the second largest manufacturing district in the United States.

More than 4,000 industrial establishments with $250,000,000 capital and an annual output valued at $330,000,000 were represented. The Wisconsin Motor Mfg. Co. exhibited a number of motors for trucks, pleasure cars and boats, including a six-cylinder 50-horsepower motor, a 4-60 and a 4-45, in addition to rough and finished castings, crankshafts, etc. Other exhibitors in this line were: Davis Mfg. Co.; Beaver Mfg. Co. and A. O. Smith Co. The American Oxhydric Co., the Vilter Mfg. Co. and the Western Fixture Co. exhibited welding and cutting apparatus. The Crown Commercial Car Co. was among the motor truck exhibitors.

A feature of the display of the Falk Co. was a large one-cylinder kerosene engine which produced all power for lighting and working exhibits, and a number of sets of helical gear systems in operation. The Evinrude Motor Co. had a display of Evinrude motors which convert ordinary rowboats into launches or motor boats. The Milwaukee School of Engineering had a complete wireless outfit, together with a model airship, the motor of which was started and stopped by wireless nearly across the main arena of the Auditorium.

CHICAGO TRUCK RUN NEXT

Chicago, Sept. 13—Next on the Chicago Motor Club's calendar is the commercial motor vehicle demonstration which is set for Monday, Tuesday and Wednesday of next week. This will not be a contest but a demonstration in keeping with the desires of the truck makers, consisting of out and home runs of around 60 miles a day, each truck carrying its scheduled load. The total distance to be covered in the 3 days will be 159 miles. If the entry list warrants it, a horse-drawn vehicle will be sent out also over the same routes in order that comparisons may be made, the horses being required to go the entire distance if it takes a week. The entries at present number twenty-eight, but it is thought there will be at least thirty start. Those in at the present time are three Clarks, two Saurers, two Alcos, two Mercurys, two Stegermans, two McIntyres, two Lauth-Juergens and one each of the Buick, Little Giant, Crown, Decatur, Adams, Swanson, Le Moon, Monitor, Pope-Hartford, Old Reliable, Durable Dayton and Sampson.

KNIGHT VISITING AMERICA

New York, Sept. 12.—Charles Y. Knight, inventor and exploiter of the sleeve-valve motor, will sail from England for the United States, leaving on the Campania on September 16. He will be 10 days in the United States, delivering lectures on the development of the Knight type of motor and its effect upon the great plants of Europe, sailing back to England on October 4. New York, Detroit and Chicago are in his itinerary, requests for technical addresses having been filed with the inventor at Coventry from interested motor men in each of these cities mentioned above.

Engineers Planning a European Trip

Members of S. A. E. Will Cross Ocean in November and Visit Car Factories in England and France—Annual Meeting of Society Will Be Held in New York City at Show Time

NEW YORK, Sept. 12—A trip of members of the Society of Automobile Engineers to Europe during November next is planned. The members of the S. A. E. will leave this side of the water for England about November 1. The first few days in England will be spent in examining the exhibits of the show which will then be in progress at Olympia, London. The visiting engineers will be entertained by the Incorporated Institution of Automobile Engineers, which is the English society corresponding to the Society of Automobile Engineers. A trip will be made to Birmingham to see the factories of the Austin Motor Co. and the Wolseley Motor Co., as well as to Coventry to go through the plant of the Daimler Motor Co. A run through some of the interesting country in the Warwickshire district, Stratford-on-Avon, and surrounding territory, has been arranged. The Humber factory, one of the largest in England, also will be visited.

It is planned to devote an evening to joint technical discussion by members of the Institution of Automobile Engineers and the Society of Automobile Engineers. The S. A. E. members will be shown around the garages of one of the big London cab companies, and perhaps the plant of the London General Omnibus Co. The party of engineers will probably go also to Newcastle-on-Tyne to see the Armstrong-Whitworth factory. The Brooklands track will be visited, some racing cars being brought specially for the occasion. The American motor car designers and producers will make a short trip to France to see some factories there.

The autumn and winter schedule of meetings of the Society of Automobile Engineers has now been announced. At a meeting of the society council just held it was decided that the annual meeting of the society shall be held in New York city, on Thursday, Friday and Saturday, January 18, 19, and 20, 1912. This is during the commercial vehicle division of the show at Madison Square garden.

TRADE GOSSIP FROM DETROIT

Detroit, Mich., Sept. 11—Dealers have been pouring into Detroit in a steady stream the past week, and the migration continues without any indication of waning interest or enthusiasm on the part of those who are doing the entertaining. This morning a delegation of nearly 200 E-M-F dealers from Texas and Oklahoma arrived in one of the Studebaker Corporation's specials for a 2-days' visit. It will be followed, later in the week, by the Kansas City delegation.

More than 400 dealers were entertained by the Studebaker Corporation and the Ford Motor Co., alone, last week. The Ford visitors included dealers from Wisconsin and Iowa. The Badger state contingent was accompanied by six Milwaukee newspaper men. The visitors were entertained with a luncheon at the Log Cabin inn, a ride to Grosse Pointe and a dinner at Hotel Tuller in the evening, at which Sales Manager N. A. Hawkins presided.

The constant stream of visitors has not interfered in the slightest degree with the efficiency of the plants. Thanks to the excellent discipline that obtains in the plants, the presence of the strangers in such large numbers, day after day, has scarcely been noticed by the employes.

A party of 300 leading business men of the upper peninsula were the guests of the Detroit board of commerce, Wednesday and Thursday of last week, and were taken through the Packard and Chalmers plants, Thursday morning. At each place they were accorded a most enthusiastic welcome. All the buildings of the Chalmers plant were decorated with flags. The visitors were received by Lee Counselman, vice-president and general manager of the company, and they were escorted through the plant by officers and heads of departments. Each was presented with a souvenir in the form of a Chalmers watch fob, and after the inspection a photograph was taken of the party, grouped on a large stand erected especially for the occasion in the company's own park. In every department visited, the upper peninsula men were confronted by bulletins, posted conspicuously, instructing employes to show the visitors every courtesy.

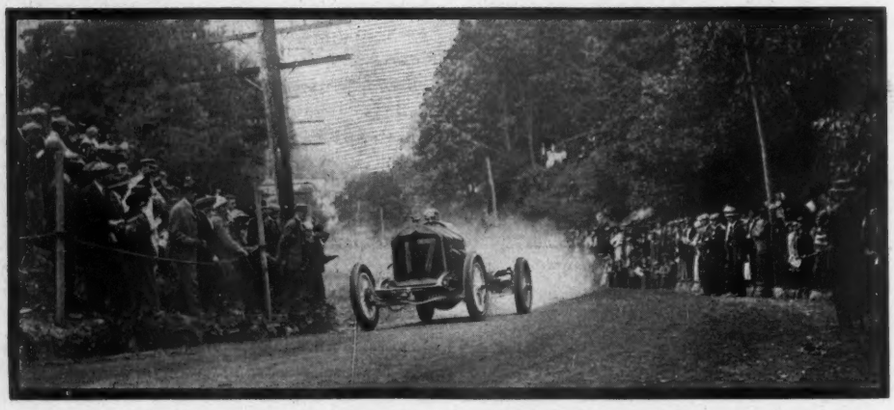
BOSTON HAS GARAGE FIRE

Boston, Mass., Sept. 10—The second big garage fire that Boston has had started early this morning in the quarters occupied by Kenneth A. Skinner, who does a large garage and renting business on Clarendon street. The fire started in one of the rear garage rooms from some unknown cause, and before it was put out forty-five cars were destroyed or badly damaged. Mr. Skinner estimated the loss first at $150,000, but it is thought that this will be found to be too high when the cars are given a thorough inspection. He said that there were fifty cars in the building, of which forty were private cars, the rest being his renting cars. Mr. Skinner was planning to move in a few days to the other end of the structure to the quarters formerly occupied by the Winton.

More Hill Honors for the National

Herr Star Performer in Annual Port Jefferson Climb, Winning Four of the Events, Including Free-for-All—Amateurs Do Well in Same Make of Car—Fast Time Made on Grade

NEW YORK, Sept. 11—In the Port Jefferson hill-climb, held Saturday, the National, which captured the honors on Dead Horse hill at Worcester, Mass., recently, again demonstrated its stamina by winning the chief events and making the fastest time on the hill, :21.31, which however, failed to break the record of :20.48, held by dePalma in the Fiat.



HERR IN NATIONAL WINNING FREE-FOR-ALL

The hill, a measured 2,000-foot course, was lined with the residents of Port Jefferson and the vicinity who had come to view the contests in spite of the rain which momentarily threatened to fall. Additional interest was given to the well-contested matches by an elbow located at about the center of the course, and of such an angle that the approaching cars were concealed from those who clustered about the finish line until they had rounded the bend and were on the final stretch. The manipulation of the curve proved to be a great factor in determining the speed, for in many instances where the time of two rival cars was close it was noticed that the winner almost invariably proved to be the one who had made the better turn.

Few Change Gears

The gradation of the hill ranges from 6 to 16 per cent. At the start there is a sharp rise for about 800 feet. The slope then becomes easier until the bend is reached, at which point it attains the maximum. There were very few instances in which the contestants dropped to second speed and when they did, they were in all cases badly defeated. The changes of gear were made just above the elbow by the smaller cars.

No accidents of any consequence marred the afternoon's sport, the nearest approach to a disaster being when No. 17 National went through a hedge fence after having passed the finish line. No damage was done except to the shrubbery. The course was kept clear by means of specially appointed police.

The small cars started first,. After this the different events were intermingled with one another, thus furnishing a variety. The first two events for stock cars were won by Ford cars, the second places

FORD, A CLASS WINNER

STARTING LINE OF PORT JEFFERSON CLIMB

PORT JEFFERSON RESULTS

STOCK CARS, $800 OR UNDER

No.	Car	Driver	Time
13	Ford	Bishop	:44.88
12	Ford		:55.27
42	Krit	Wehr	1:37.87

STOCK CARS, $801 TO $1,200

40	Ford	Lawson	:43.06
10	Ford	McCormick	:46.61
10	Paige-Detroit	Craig	:48.71

STOCK CARS, $1,201 TO $1,600

31	Lion	Apger	:29.22
24	Correja	Taylor	:33.95

STOCK CARS, $1,601 TO $2,000

2	Corbin	Tucker	:32.90
8	Cole	Blair	:43.55
36	Velie	Campbell	:46.25
21	Colby	Craig	:47.95

STOCK CARS, $2,001 TO $3,000

14	National	Herr	:24.45
22	Mercer	Hughes	:25.40
37	Mercer	Griswold	:28.09

FREE-FOR-ALL, ARDENCRAIG TROPHY

17	National	Herr	:21.31
15	Knox	Coffey	:21.57
1	Pope-Hartford		
	Hummer	Disbrow	:23.87
16	Knox	Belcher	:24.04
27	Fiat	Stuard	:24.90
22	Mercer	Hughes	:27.09
6	Mercedes-Simplex	Bellman	:28.27

161-230 INCHES

31	Lion	Apger	:27.57
60	Krit		:36.20
51	Jackson	Hutcheson	:38.26
28	Courier	Davis	:42.24

231-300 INCHES

22	Mercer	Hughes	:25.55
34	Corbin	Masoville	:27.32
9	Cole	Heyrel	:29.12
5	Staver-Chicago	Wright	:32.64
24	Correja	Taylor	:32.76
19	Pa.-Detroit	Craig	:47.07

301-450 INCHES

14	National	Herr	:23.19
1	Pope-Hartford		
	Hummer	Disbrow	:24.33
16	Knox	Belcher	:24.79
31	Lion	Apger	:33.14

451-600 INCHES

17	National	Herr	:21.37
15	Knox	Coffey	:21.90
16	Knox	Belcher	:24.52
6	Mercedes-Simplex	Bellman	:28.22
5	Staver-Chicago	Gresivold	:35.42

AMATEURS, CARS UP TO $1,200

2	Corbin	Tucker	:34.56
40	Ford	Lawson	:41.80

AMATEURS, CARS $2,001 OR OVER

14	National	Fallon	:25.47
52	Knox	Hawkins	:34.23
56	Speedwell	Vandeventer	:39.97
23	Acme	Brass	:55.55

AMATEURS, LIMITED TO CARS OWNED BY RESIDENTS OF PORT JEFFERSON AND RADIUS OF 5 MILES FROM ARDENCRAIG INN OF SAID VILLAGE

26	Buick	Bishop	:33.43
5	Staver Chicago	Gresivold	:35.42
53	Pierce Arrow	Alvord	:35.54
28	Cononir	Davis	:41.52
4	Buick	Schmeltz	:51.02

SPECIAL EVENT

3	Metz	Buchanan	:38.50
13	Ford	Bishop	:46.63

New Yorkers Hold a Successful Meet

Ford, Lion, Corbin, Mercer, Buick and Metz Among the Class Winners—Hill a Climb of 2,000 Feet—Curve Hard to Negotate and a Most Important Factor in Determining Results

in both these events likewise going to the Fords. The Krit in the first event was the only car whose official time stood over 1 minute, although there were several cars which went over this time in one of the two attempts which were allowed. The Krit did not take a second trial in this event.

Good Day for National

The National cars distinguished themselves by winning all the largest events of the day including the free-for-all for the beautiful Ardencraig trophy, besides the events in their class for selling price and piston displacement. The amateur event won by the National 14, driven by W. J. Fallon, was protested by E. B. Hawkins, a post-entry to this race. The protest was officially made in writing at the termination of the climb, on the ground that the National car was not owned by the entrant for the required 30 days before the contest. This matter will be decided later by the A. A. A., under whose auspices and rules the climb was held.

The third event brought out only two entries, a Lion car which won, and a Correja, which lost by about 4 seconds. The fourth event was won by the Corbin, which had a margin of about 10 seconds on the nearest rival, the Cole, driven by Walter Blair. The Corbin was driven by the owner, H. B. Tucker. In this event the Velie nearly stalled its motor on the first attempt at the bend, taking over 1 minute 15 seconds to climb the hill. On the second attempt, however, the Velie made the climb in 46:25, taking third place.

Herr Makes Fast Climb

Fine time was made in the fifth event, the National 14 driven by Herr proving to be the winner by less than 1 second over the Mercer driven by Hughes. The Mercer did not take the bend as quickly as the National, losing considerable time on the skid. The National held closer to the crest of the road, making a much prettier turn and saving time.

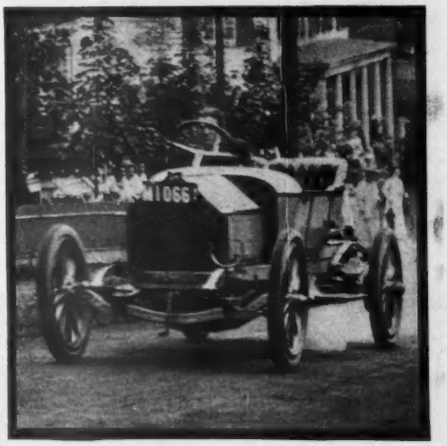
The free-for-all excited the liveliest interest. The first car, a Mercedes-Simplex chain drive, thundered up the hill, seeming to gain speed every instant. Just as it reached the finish line it swerved into the gutter, breaking the timing wire and sending a shower of pebbles about the judge's stand. No damage was done the car, however, The National car climbed the hill in :21.31, making the fastest time of the day. This did not upset the record made last year by Ralph dePalma in a Fiat, as his time was :20.48.

The other events which were graded by piston displacement were won by the Lion, driven by F. S. Apger; Mercer, driven by Hughie Hughes; and National, driven by Donald Herr.

The amateur events which were entered by residents of Port Jefferson and vicinity, excited great interest and the attempts of the rival drivers to better each others' time were cheered by their neighbors who were gathered on the hillside. It was in the amateurs' event for cars selling over $2,001 that the protest was entered by E. B. Hawkins, who is postmaster of Huntington, a nearby town, against the National, driven by W. J. Fallon, the promoter of the race. Mr. Hawkins was second in his Knox.

A special event between a Ford and Metz 22 went to the latter rather handily, after a pretty climb.

LION, CLASS WINNER, MAKING ITS CLIMB



STAVER IN AMATEUR EVENT

PORT JEFFERSON STREET, START OF CLIMB

FALL SHOW FOR CHICAGO

Chicago, Sept. 11—The Chicago Automobile Trade Association has decided definitely to stage its fall opening from September 30 to October 7 inclusive, a period of 8 days in which time the dealers will keep open house, displaying their 1912 models and decorating the row. It is planned to illuminate the street at night by means of strings of incandescents and each dealer is supposed to keep open evenings. Plans for financing the show call for assessing each dealer according to his frontage, the dealers occupying first floors paying $2 a foot, with a minimum charge of $50. Those on side streets are to pay 75 cents a foot. This, it is thought, will raise a fund that will enable Chicago to make a proper display of the new styles and thus stimulate fall trade.

Routes and Touring

PREMIER TOURISTS IN ROCKIES

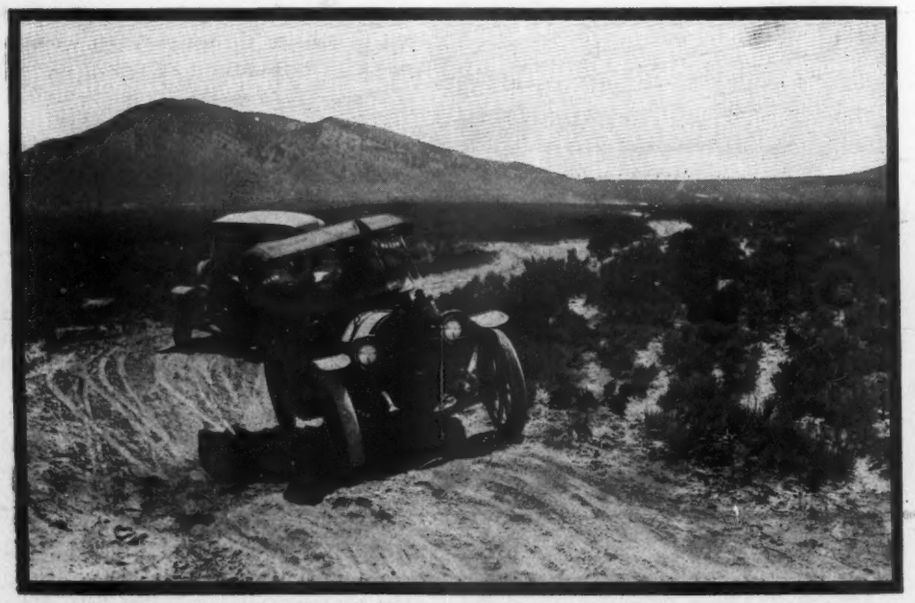
TWO OCEAN-TO-OCEAN HIGHWAYS

INDIANAPOLIS, IND.—Editor Motor Age—In planning a cross-country trip one might choose any of several routes from New York to the Missouri river. From a scenic standpoint the route followed by the Premier ocean-to-ocean tourists in July is best. Through the Blue Ridge and Allegheny mountains of Maryland and Pennsylvania the route runs over the rolling hills of West Virginia and eastern Ohio, over good level, straight roads in western Ohio to Indianapolis, then north to Chicago, west to Davenport, Iowa, then over the famous river-to-river road to Council Bluffs, Iowa, and Omaha, Nebraska. Or from Chicago, Omaha could be reached by a more direct route, going via Clinton and Marshalltown, Iowa.

The roads across Pennsylvania are anything but ideal and I might say they are as bad or probably worse than any other transcontinental roads. However, this bad strip of roads can be avoided by following the route laid out by A. L. Westgard's transcontinental Premier last fall, going from New York up the Hudson to Albany, through Mohawk Valley, Utica, Syracuse, Rochester, Buffalo, Erie, Cleveland, Columbus, Indianapolis and St. Louis. This route is free from long climbs on second speed and has very few thank-you-mams. However, the most important thing is choosing your route west of the Missouri river.

If one is going to rough it and enjoys camping and a few days away from civilization the Santa Fe is the route to follow. From Indianapolis to St. Louis and Kansas City, roads and accommodations are good. Leaving Kansas City, the old trail is picked up at Ottawa, Kansas, and from this point on the tourists have splendid hotel accommodations at each night's stop. The Harvey hotels are just far enough apart to make a good day's run and are located at Newton, Hutchinson, Dodge City and Syracuse, Kansas; Lajunta and Trinidad, Colorado, and Las Vegas and Albuquerque, New Mexico. Beyond Albuquerque a camping outfit is needed as no hotel accommodations can be had for several days. The worst sand of the trip is encountered a few miles east of Albuquerque. Sixty miles farther the railroad is left behind for a stretch of 500 miles. A lava bed is followed for one hundred miles and the continental divide is crossed at 10,400 feet. Trails are hard to follow in many places and for quite a few miles it is necessary to travel by directions until Springerville is reached in Arizona.

At Springerville tourists can stop at a boarding-house and enjoy a night with the cow punchers. Leaving Springerville there is a 20 miles climb to the summit of the White Mountains. In November there is much snow on the summit for 8 miles through the forest reservation, but when Cooley's ranch is reached on the west side of the mountains the road conditions change for the better. The road would be fair in wet weather and good in dry weather. From Fort Apache to Globe, to Roosevelt Dam and to Phoenix, there are good government-built roads for the purpose of freighting supplies into the fort from Globe and for hauling freight and building materials from Phoenix into the Salt River valley and Roosevelt dam country. From Phoenix across the desert into southern California traveling by motor car is easy except in a few places where it is necessary to run in the washes from the mountains. However, the roads are hard and good most of the way, and after crossing the summit of the San Bernardino mountains the roads are oiled and marked with signboards all the way to Los Angeles.



TYPICAL SCENE IN HEART OF ROCKIES

On the central route hotel accommodations can be had all the way through; from Omaha to Denver the roads are good; from Denver to Forks hotel and then through the foothills of the Rockies to Tie Siding and the Laramie plains in Wyoming where the highest elevation, 8,000 feet, is reached the conditions also are satisfactory. The trail from Laramie to Medicine Bow, Wyoming, is very good but beyond this point the roads are somewhat bad up to Evanston, Wyoming, near the Utah line. From Evanston to Salt Lake City scenery and road conditions are fine.

Probably the worst roads on the whole route are around the north end of the great Salt Lake. Most cross country tourists ship across the lake but this is not necessary. The run can be made by starting early, with easy driving through the washouts. Not one of our twelve Premiers had a flat tire on this day's run. From Ogden to Lucin, Utah; from Montello, Nevada, through Wells, Elko, Eureka, Austin, and to Reno the roads are good except for a few alkali flats where the dust is very heavy. Hotel accommodations are good at any of these points.

Information

NEAR GREAT AMERICAN DESERT

From Reno to Truckee, Lake Tahoe and the summit of the Sierra Nevada mountains the scenery is beautiful and the roads are very good. They keep improving to Sacramento and Frisco.

It would be hard to say which route is better from the Missouri river west. The old Santa Fe trail is very interesting all the way and from La Junta, Colorado, the Indian life begins. There are found adobe buildings and buildings of the mission style, good hotels and good roads to Albuquerque, New Mexico. From this point on it is necessary to camp out and this is certainly ideal country for camping. November nights are almost as light as day, due to a bright moon and the high elevation. There are clumps of cedars on New Mexico's mountains and deserts that make the finest camp fires. Nights are cool and days are very pleasant. Lava beds, extinct volcanoes, salt lakes, forest reservations, red buttes, land buttes, mesas, rocky-canons, desert basins, deep arroyas, Indian reservations, giant cacti and a dozen other species are many of the interesting features that can be seen only along the old Santa Fe trail. This route has one 45 mile climb, about three 20-mile climbs and many 3-mile climbs, but being so far south can probably be covered at any time of the year.

The central route is more practical. It is free from long climbing on the low and second speeds. The continental divide is crossed at 7,500 feet and the Sierra Nevada mountains at 7,600 feet, but the highest elevation is reached at Tie Siding, Wyoming, which is on the plains 8,000 feet above sea level. The climb is so gradual over the Laramie plains that one does not realize the grade of the rarified atmosphere.

The steepest grades are in the Sierra Nevada mountains but are easy to negotiate, so there is nothing to fear on this route, except the summer rains in Iowa, while the Sierra Nevada summit must be crossed before the middle of October to avoid the heavy snow storms, as winter sets in early up there and lasts a long time. Even in the first week of August we found a bank of snow several feet deep on the shady side of the mountains near the summit, the remains of last winter's snows.

On the central route large cities and fine hotel accommodations can be figured on at the end of each week. For instance Indianapolis was the first Sunday stop of the Premier ocean-to-ocean caravan, Omaha the next, Denver, Salt Lake City, and San Francisco following in order.

These accommodations can only be had up to Alburquerque, New Mexico, on the southern route. Then again it is necessary to roll boulders and build roads in spots on the Santa Fe trail, while the central route can be traveled without block and tackle, shovel or any road building. From a scenic point of view the central route does not average up to the lower road. The first glimpse of the Rockies from the plains is quite inspiring, also the approach to the foot-hills and finally the crossing of the great divide. However, the tourist also gets all of this on the southern route.

The ride through Echo Canyon, Utah, and the coast of 12 miles down Parley's canyon, from the summit of the Wasach mountains into Salt Lake City, the novelty of crossing the alkali flats at speed, then the change from the desert into the Sierra Nevada mountains is the grandest experience on the entire route and might be mentioned as the real wonder of the trip.

It would be hard to make any distinctions, as both have their advantages and disadvantages. The Santa Fe trail might be classed as the scenic route and the central as the more practical route. It would not cost a great deal of money to put both routes in fine shape. The land consists of material better than macadam for road surface and it would only be necessary to grade the trails and put in a few bridges and signboards. With this work completed hundreds of auto cars would make the trip each year. As it is the conditions are not bad and there is no reason why anybody should have any trouble in making the trip, providing reasonable time is taken and a good car is used.

The trip can be made in from 20 to 25 days easily, taking a direct route from New York, or in 30 days, taking time out to visit several of the great cities requiring detours from the direct route.—Ray F. McNamara.

Mr. McNamara has traveled both the above routes, having driven Westgard's car. Also the pilot car for the ocean-to-ocean tourists.—Ed.

INTO IOWA FROM ILLINOIS

Roanoke, Ill.—Editor Motor Age—Will Motor Age kindly give me through the Routes and Touring Information department the best route from La Salle, Ill., to West Union, Ia.?—William Beer.

OCEAN-TO-OCEAN TOURISTS NEARING SIERRA

The Automobile Blue Book routing from La Salle to Davenport, a distance of 94.5 miles, is over gravel and good dirt through Peru, Spring Valley, Seatonville, Hollowayville, Princeton, Wyanet, Sheffield, Mineral, Atkinson, Geneseo, Brier Bluff, Rock river bridge, Moline and Davenport. Davenport to Waterloo and Independence is through Maysville, New Liberty, Bennett, Clarence, Mechanicsville, Lisbon, Mt. Vernon, Marion, Cedar Rapids, Palo, Shellsburg, Vinton, Mt. Auburn, La Porte, Washburn, Waterloo, Jesup and Independence, a distance of 96.4 miles.

The Iowa Publishing Co. advises that there are well traveling roads the rest of the way through Fayette to West Union, approximately a distance of 126 miles.

CLEVELAND TO PERU

Peru, Ind.—Editor Motor Age—I wish to inquire in regard to the best route between Cleveland, O., and Peru, Ind. I have noticed in several issues maps and detailed descriptions of various trips to different parts of the country, but never have found anything between the above mentioned points, and as I expect to make the trip in the near future would greatly appreciate any information given.—D. S. B.

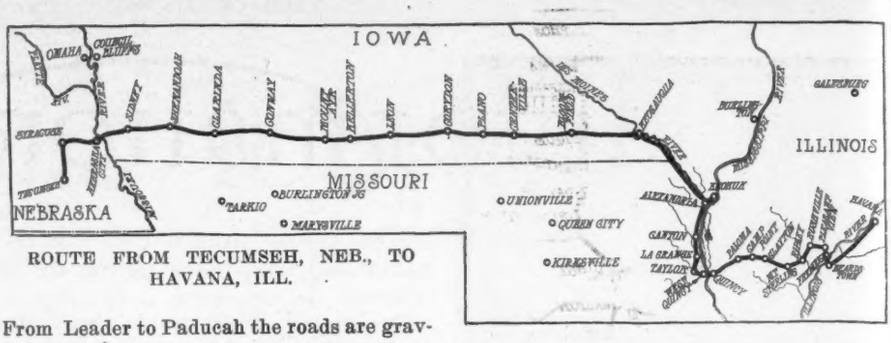
The Automobile Blue Book, volume 4, covers this entire trip with running directions, mileage, town-to-town itinerary, optional routes, etc. The roads will be found to be quite good.

The itinerary is as follows: Cleveland to Lima, 156.5 miles—Dover, Ridgeville, Elyria, Oberlin, Townsend, Norwalk, Monroeville, Bellevue, Clyde, Green Springs, Tiffin, Bascom, Fostoria, Arcadia, Findlay, Bluffton, Beaver Dam and Lima; Lima to Fort Wayne, 65.8 miles—Elida, Delphos and Van Wert; Fort Wayne to Peru, 68.9 miles—Huntington, Wabash and Peru. A good settled weather route between Cleveland and Clyde is Rocky river viaduct, Lorain, Vermilion, Ceylon Junction, Huron, Sandusky and Castalia.

CROSSING WESTERN KENTUCKY

Union City, Tenn.—Editor Motor Age—Please answer in Motor Age, the best route from Union City, Tenn., to Detroit, Mich. —J. F. Semones.

Motor to Fulton, Ky., from Union City, thence 26 miles to Mayfield through Water Valley, Wingo and Pryorsburg. Continue to Paducah, 27 miles through Hickory Grove, Falsomdale, Leader and St. John. You will have fair dirt roads to Mayfield.



ROUTE FROM TECUMSEH, NEB., TO HAVANA, ILL.

From Leader to Paducah the roads are graveled, but about ½ mile out of Leader you will ascend a very steep sand and gravel hill for about ¼ mile. Into Paducah from St. John is over one of the best stretches of gravel in the state.

You can ship your car from Paducah to Evansville, Ind., as a boat runs daily between these two points, or leave Paducah for Smithland on the Benton road to the I. C. railroad crossing and turn left on Clark's river ferry and follow the main road from the ferry. It is 25 miles to Salem and Marion, 35 to Morganfield through Mower, Tradewater, Sturgis and Gum Grove, and 25 miles through Waverly and Corydon, to Henderson. At Corydon to within 5 miles of Henderson is a rock road, but the balance is dirt.

At Henderson cross the Ohio river to Evansville, Ind., and follow the Automobile Blue Book routing to Haubstadt, Princeton, Hazleton, Vincennes, Bruceville, Busseron, Carlisle, Paxton, Sullivan and Terre Haute, where you come onto the national highway and travel on it to Vandalia by way of Seeleyville, Staunton, Brazil, Harmony, Reels, Manhattan, Coatesville, Mt. Meridian, Stilesville, Bellville, Plainfield, Bridgeport, Indianapolis, Richmond, Lewisburg, Arlington, Englewood and Vandalia. The remainder of the trip lies through Lima, Toledo and Ypsilanti to Detroit, and the intermediate towns are: Eaglesburg, Troy, Piqua, Sidney, Wapakoneta, Cridersville, Snyder, Lima, Beaver Dam, Bluffton, Mt. Cory, Findlay, Van Buren, North Baltimore, Bowling Green, Haskins Station, Perrysburg, Toledo, Dundee, Milan, Stonycreek, Ypsilanti, Denton, Wayne, Dearborn and Detroit.

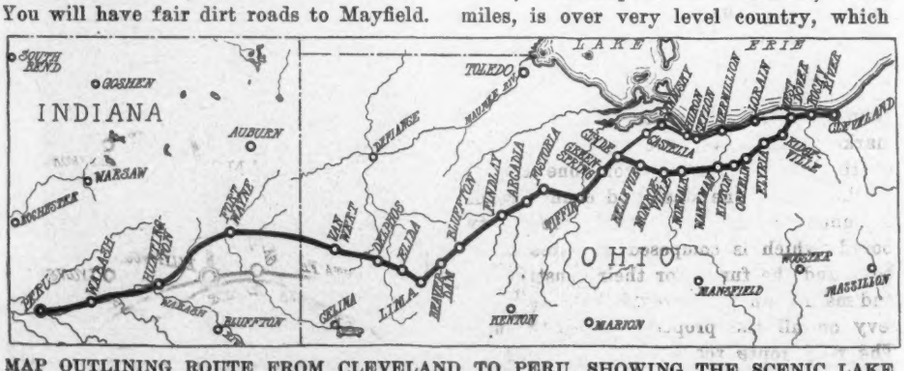
Terre Haute to Indianapolis, 70.5 miles, is over gravel or stone road all the way on generally level country with some rolling sections, and one fairly steep hill at Reels; Indianapolis to Vandalia, 105.7 miles, is over very level country, which is mostly excellent gravel pike; Vandalia to Toledo, 152.6 miles, is over practically level country with either good gravel or stone pike roads; and Toledo to Detroit for the most part a hard gravel or stone road with short stretches of sand between Ida, Dundee and Milan is a distance of 59.2 miles.

PADUCAH, KY., TO ST. LOUIS

Paducah, Ky.—Editor Motor Age—Will Motor Age please give me the route from Paducah, Ky., to St. Louis, Mo., with the distance?—F. D. Rodfus.

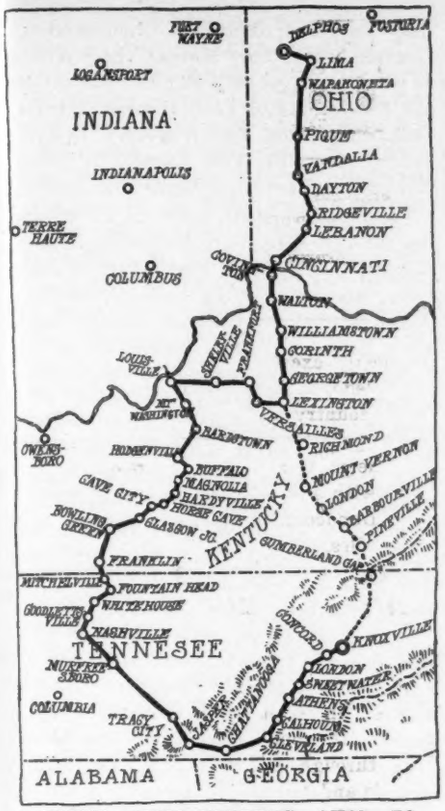
The trip to St. Louis is a trifle roundabout. It would take you to Henderson, Ky., through Smithland, Salem, Marion, Sturgis and Morganfield, crossing the Cumberland river at Smithland and the Tennessee river at Paducah. This is about 100 miles and the road is in fairly good shape, none of it being pike, however, but good solid dirt. If you prefer, you can ship your car to Evansville, Ind., which is on the other side of the river from Henderson, Ky., as we understand there is a boat running daily from Paducah to Evansville.

Should you decide to motor to Henderson you will cross the Ohio river to Evansville, Ind., and continue to Vincennes, Ind., through Haubstadt, Princeton and Hazleton, where the Blue Book routing to St. Louis takes you through Lawrenceville, Olney, Noble, Flora, Xenia, Salem, Shattuck, Clinton, Carlyle, Buxton, Breeze, Aviston, Trenton, Lebanon, Shiloh, Belleville and Edgemont. For the most part the Vincennes-St. Louis route is not



MAP OUTLINING ROUTE FROM CLEVELAND TO PERU, SHOWING THE SCENIC LAKE SHORE ROUTE FOR SETTLED WEATHER

OPTIONAL ROUTES BETWEEN KANSAS CITY AND OMAHA



ROUTE FROM DELPHOS, OHIO, TO KNOXVILLE

traveled a great deal by motorists, but in the summer months no difficulty would be encountered and the road is almost straight all the way. It is a distance of 155.6 miles over level country on fair dirt roads.

ROUTES TO KNOXVILLE

Delphos, O.—Editor Motor Age—I desire to motor to Knoxville, Tenn., by way of Cincinnati from here, and would like information on a route, the roads, the important accessories for a trip of this kind, and also if it will be necessary to have any extra licenses through Kentucky and Tennessee. I hardly think the Official Automobile Blue Book covers all this territory.—Charles C. Kitts.

Follow route No. 330 in the volume 4 Blue Book to Lima, route No. 328 to Dayton, route No. 356 to Cincinnati, No. 348 to Lexington, and No. 721 to Louisville. Motor Age could not give any better information than you will find in this book, as it has everything in its most complete form. There is a short line route from Lexington to Knoxville, but one that Motor Age knows nothing about. However, the towns are Richmond, Mt. Vernon, London, Barboursville, Pineville, Cumberland and Knoxville.

From Louisville over the longer route you will pass over the Lincoln memorial highway to Nashville, Tenn. The itinerary is as follows: Buechel, Ferncreek, Mt. Washington, Highgrove, Cox's Creek, Bardstown, New Haven, Athertonville, Buffalo, Magnolia, Canmer, Uno, Hardyville, Bear Wallow, Cave City, Glasgow Junction, Bowling Green, Franklin, Mitchell, White House, Goodlettsville and Nashville, a distance of 193.9 miles, over which the Glidden tourists passed in 1910. Two different routes take you to Knoxville, the shortest being Lebanon, Watertown, Liberty, Smithville, Sparta, Crossville, Rock wood, Kingston and Concord; the longer route is by way of Chattanooga, passing through Lavergne, Smyrna, Mufreesboro, Beechgrove, Manchester, Pelham, Monteagle, Sequatchie, Jasper, Chattanooga, Ooltewah, Cleveland, Charleston, Riceville, Athens, Sweetwater, London, Concord and Knoxville.

A few suggestions in the way of accessories might help you to think of others. A length of stout rope, preferably with an iron hook bound in one end, can be attached to a tree and using one rear hub as a windlass, the car can be made to pull itself out of a ditch or hole that would otherwise require a team of horses. Mud chains and canvas strips a little wider than the car wheels will serve as a temporary road surface to give traction for the rear wheels if the car stalls in sandy spots. Don't omit the collapsible canvas pail for getting water for the radiator. A hatchet sometimes comes in handy, and a few nails of mixed sizes might not come amiss. Be sure and have the required tools to handle any nut or bolt about the car and that your jack, tire tools and repair outfit are in good shape. If you have your Motor Age for June 15, on page 29 you will find some suggestions about preparing for a tour. The article enumerates the different parts to be inspected before starting. It will pay you to read it through and prepare yourself accordingly.

As for registration, you can tour in Kentucky without any additional fees, but in Tennessee you are not exempt and will have to comply with the law.

KANSAS' MERIDIAN HIGHWAY

Manhattan, Kan.—Editor Motor Age—The highway known as the Meridian road across Kansas follows closely the sixth principal meridian from Wellington on the south to Wichita, Newton, McPherson, Salina, Minneapolis and Concordia to Belleville on the north, a total distance of 245 miles from the state line of Oklahoma to Nebraska on the north.

Our new road law provides that the roads shall be classified as state roads, county roads, mail route roads and township roads. The state roads are those designated as such by the legislature. The county roads are those set aside as such by the county boards of the several counties, for the purpose of connecting market centers and are to be as nearly continuous as possible from one county to the next. The state and county roads are under the direct control of the county board, which is composed of three members, and the funds for their construction and maintenance are provided by a general levy on all the property in the county. The mail route roads are roads used by the rural carriers which have not been classified as county roads, and the township roads are those remaining. The mail route and township roads are kept up at township expense and are under the direct control of the township board.

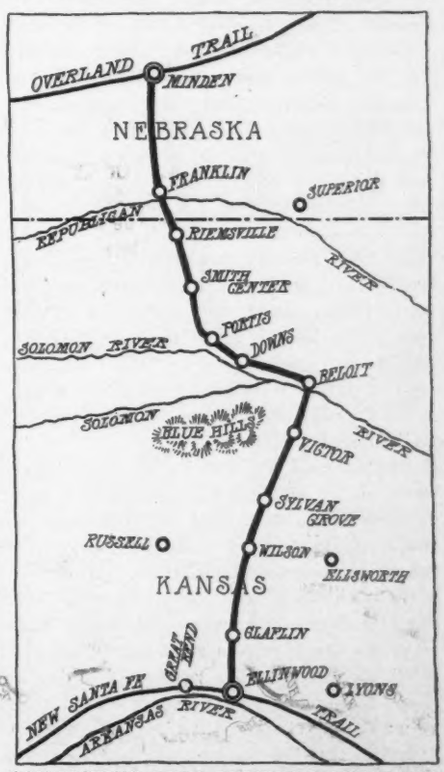
The Meridian road through most of the counties has been classified already as a county road and many of the counties have done considerable work. There is no rock or gravel available at a reasonable cost along most of the line so that for a considerable time this road can only be a well maintained earth road, but it is my understanding that this is the first road the state will construct. It is planned to extend the road to the gulf.

The accompanying illustration is the marker which will be used along the road through Kansas. The markers have already been ordered and will be placed as soon as possible. At each turn in the road the telegraph poles will be painted for some distance on either side. The total distance of the road is 245 miles, and the markers show the miles between each station.

A northeast road has been located connecting with the Meridian road at the state line, running through Hebron, Fairbury, Beatrice and Lincoln. The Meridian road connects with the new Santa Fe trail at Newton and it is proposed to extend the line directly north from Belleville to Grand Island, Neb., where it will connect with the old Oregon trail.—W. G. Gearhart, State Engineer.

MOTORING TO SOUTH DAKOTA

Decatur, Neb.—Editor Motor Age—Early in September I want to take a trip by motor car from Decatur, Neb., to Winner, S. D., thence to Chamberlain, S. D.,



CONNECTING LINK BETWEEN OVERLAND TRAIL AND SANTA FE TRAIL

thence north to Ree Heights, east to Mankato, Minn., and south to Sioux City, Ia. I am acquainted with the road from Decatur, Neb., to Winner, S. D., but no farther. Also give me information about crossing the White river. Is there a bridge or ferry between Winner, S. D., and Chamberlain, S. D., at any point? If so, where?—Subscriber.

There is no established road between Chamberlain and Ree Heights. However, there is a fairly good wagon road by way of Gilchrist ranch, which is about midway between the two points. From Ree Heights motor to Miller, Wessington, Wolsey, Virgil, Alpena, Woonsocket, Letcher, Mitchell, Fulton, Spencer, Benclare, Larchwood, Lester, Rock Rapids, Lakewood, Hull, Sheldon, Sanborn, Hartley, Spencer, Milford, Arnolds Park, Okaboji, Spirit Lake, Jackson, Sherburn, Fairmont, Blue Earth, Winnebago, Amboy, Garden City and Mankato.

Mankato to Sioux City return over the same road as far as Hull, then travel south through Sioux Center, Maurice, Struble, Le Mars, Merrill, Hinton, James and Leeds. A different route from Spencer, Ia., is south to Sioux City by way of Storm Lake, through Sioux Rapids, Truesdale, Storm Lake, Alta, Cherokee, Marcus, Remsen Station, Ovens Station, Le Mars, Merrill, Hinton, Leeds, and Sioux City.

Motor Age cannot give you any information about crossing the White river, nor mode of crossing from Winner to Chamberlain. Motor Age believes that local information will be found more satisfactory.

NEW OKLAHOMA ROAD ROUTE

Fairbury, Nebr.—Noting the interest in the good roads movement throughout Nebraska, I am sending herewith a map showing a route which has been selected by the motor and commercial clubs of Lincoln, Beatrice, Fairbury, Hebron and Belleville. About 90 per cent of the road from Lincoln to Fairbury has been graded and dragged. It is the best road in this part of the state, if not the best in the state. About 60 to 70 per cent of the road from Fairbury to Belleville has been graded and dragged. There are some hills on this stretch and some bad miles. These are being looked after now and we expect to have this portion of the road done before fall. It cannot be called a bad road at present. It can be traversed in 24 hours after a rain.

The entire route will be carefully taken care of by the various motor and commercial clubs and it is our intention to make this a perfect road over the entire length. The road from Lincoln to Belleville has already been partly marked. This road really only runs to Chester. There it meets the Meridian road for Selina and Wichita, Kans. This road was orginally planned for our own use, but found that it makes an elegant road to Denver from Omaha, via Fairbury, and meeting the Kansas City-Denver road at Salina. Cars of 30-horse power make the run from

FROM LINCOLN TO BELLEVILLE

Fairbury to Lincoln in from 3 to 3½ hours.—DeWitt Hansen.

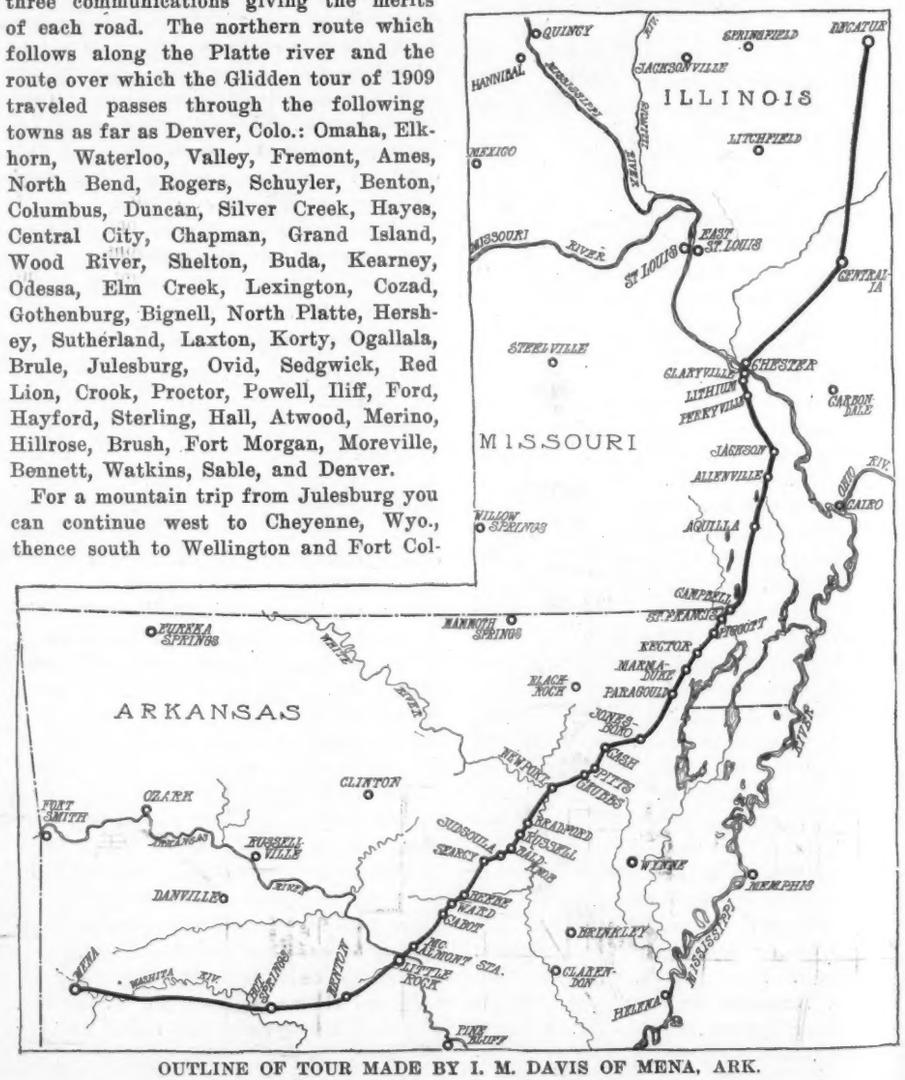
TOUR TO PACIFIC COAST

Canton, S. D.—Editor Motor Age—Will Motor Age please publish the best route to Los Angeles from Omaha by way of Denver?—C. A. South.

For a map of the two different routes through Nebraska from Omaha to Denver you are referred to the issue of July 20, page 23. On this same page you will find three communications giving the merits of each road. The northern route which follows along the Platte river and the route over which the Glidden tour of 1909 traveled passes through the following towns as far as Denver, Colo.: Omaha, Elkhorn, Waterloo, Valley, Fremont, Ames, North Bend, Rogers, Schuyler, Benton, Columbus, Duncan, Silver Creek, Hayes, Central City, Chapman, Grand Island, Wood River, Shelton, Buda, Kearney, Odessa, Elm Creek, Lexington, Cozad, Gothenburg, Bignell, North Platte, Hershey, Sutherland, Laxton, Korty, Ogallala, Brule, Julesburg, Ovid, Sedgwick, Red Lion, Crook, Proctor, Powell, Iliff, Ford, Hayford, Sterling, Hall, Atwood, Merino, Hillrose, Brush, Fort Morgan, Moreville, Bennett, Watkins, Sable, and Denver.

For a mountain trip from Julesburg you can continue west to Cheyenne, Wyo., thence south to Wellington and Fort Collins, Loveland, Berthoud, Longmont to Denver. From Fort Morgan there is still another route, which has been laid out by the Denver Motor Club through Weldon, Orchard, Hardin, Kuner, Kersey, Greeley, Evans, Plattville, Fort Lupton, Brighton, Henderson, Hazeltine, Model and Denver.

From Denver south to Santa Fe a route lies through Petersburg, Littleton, Asegua, Sedalia, Castle Rock, Perry Park, Palmer Lake, Monument, Pring, Breed, Pike View, Colorado Springs, Leander, Kelker, Skinner's, Crews, Fountain, Buttes, Buttes No. 2, Henkel, Pinon, Bragdon, Eden, Pueblo. Distance approximately 114 miles over sand and clay mixtures to Colorado Springs and very good roads, with some adobe and sand, the balance of the route to Pueblo. From Pueblo to Santa Fe, distance approximately 315 miles, pass through San Carlos, Verde, Salt Creek, Larimer, Huerfano, Apache, Cuchara Junction, Walsenburg, Winchell, Main, Monson, Bunker Hill, Rugby, Lynn, Acme, Ludlow, Suffield, Bowen, Trinidad, Starkville, Raton, Maxwell City, French, Springer, Calmore, Wagon Mound, Tipton, Watrous, Los Vegas, Tecolate, Blanchard, San Jose, Pagareto, Glorieta, Santa Fe. Motor Age suggests that while in Denver you call at the headquarters of the Denver Motor



OUTLINE OF TOUR MADE BY I. M. DAVIS OF MENA, ARK.

Club and secure specific road directions over this route, as the portion of the trip from Pueblo to Santa Fe is a most difficult one and will be fraught with many difficulties at the best. Undoubtedly, the wisest course to pursue is to secure the services of a guide over the Raton mountains from Trinidad and also beyond Raton.

From Santa Fe, N. M., to Phoenix, Ariz., the motorist has the choice of two routes: One going through Albuquerque, then following the Santa Fe Railroad to Prescott, then Phoenix. The other takes the tourist south along the Rio Grande river to San Marcial, N. M., thence to Rincon, Silver City, Lordsburg, Wilcox, Benson, Florence, and Phoenix.

Phoenix to Los Angeles is through Salome, Blythe Ranch, Chucawala, Palm Springs, Metea, White Water, Banning, Beaumont, San Bernardino, Los Angeles. This portion of the route—Santa Fe to Los Angeles—is one which has been laid out by the Automobile Club of Southern California. For explicit road directions call at the headquarters of the Maricopa Automobile Club, Phoenix, Ariz.

A route from Denver through Wyoming, Utah, Nevada and California to San Francisco and Los Angeles takes you first to Cheyenne, Wyo., thence to Sherman, Laramie, Medicine Bow, Fort Steele, Rawlins, Bitter Creek, Rock Springs, Granger, Evanston, Ogden, Kelton, Lucin, Wells, Elko, Palisade, Battle Mountain, Winnemucca, Lovelock, Reno, Truckee, Colfax, Sacramento, Stockton, San Francisco, Solidad, San Miguel, San Luis Obispo, Los Olivos, Santa Barbara, and Los Angeles. You will have to do a great deal of mountain climbing on this more northern route.

A map of the two routes from Denver to Los Angeles is in Motor Age of May 18, page 20. On the first two pages of this department you will find what Mr. McNamara has to say about the transcontinental highways. He has given good reliable information and can be considered an authority on this subject, for he has twice made the run across the continent and knows the two best routes.

SIGNBOARD ON MERIDIAN ROAD

PREFERS PLATTE RIVER ROAD

Aurora, Neb.—Editor Motor Age—The recent discussion over the relative merits of the transcontinental and river routes through Nebraska have interested me very much, as I have been over both of them west from this point. They are equally accessible from Aurora and the choice would depend upon the condition of the road.

Going west over the river route we found the road from Grand Island to Julesburg in splendid condition, except for some sand near Paxton which I am told can be avoided by going south of the railroad, and also some bumpy road between Ogalalla and Julesburg, which a small amount of working would entirely remedy. This route is good because of natural soil conditions, not because of any considerable amount of attention. Evidences of proper care are far too rare all along the route but especially from Ogalalla to Julesburg. Still, in spite of lack of attention it is a good road.

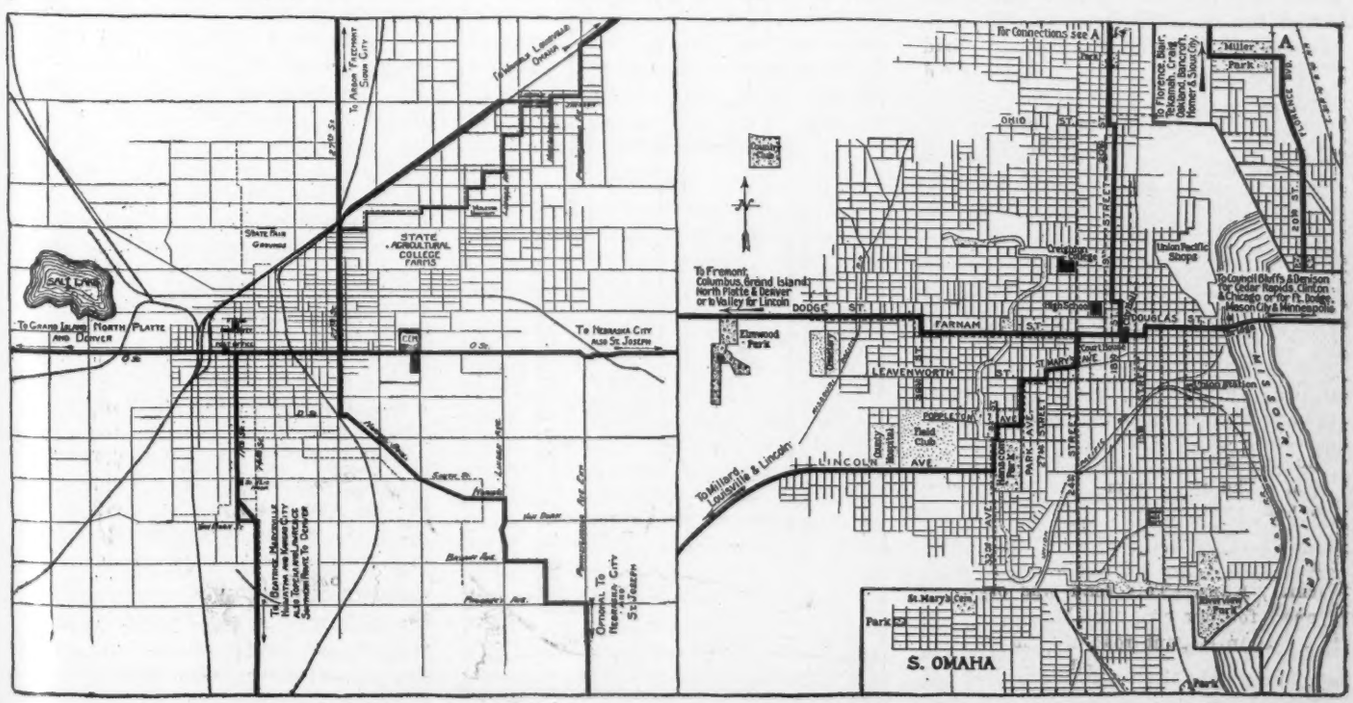
Returning over the transcontinental route we found the mileage very little shorter, the route hilly, grades poorly constructed where they existed at all, and markings hardly sufficient to follow without a guide book. A rain of 2 days before had left the surface full of mudholes, rutted and rough. No part of it was dragged except a few miles each way from Minden where the grading and dragging were both good and the road fine. We were unable to average more than 12 to 15 miles per hour over this road and the trip of about 250 miles did more harm to the car than would a trip of 1500 miles over the river route with road conditions as we found them. No road can be considered good which a moderately heavy shower will render unfit for travel for 2 days following. With good soil and proper working such a rain should improve it.

The fact is, that an amount of work which would put the transcontinental route in passably good condition, would make of the river route a splendid highway which could be maintained at nominal expense and trouble, and be shorter in hours if not in miles to Denver.—I. W. Haughey, M. D.

DETROIT FROM MILBANK, S. D.

Milbank, S. D.—Editor Motor Age—I am planning a trip from Milbank, S. D., to Red Lake Falls, Minn., and wish to go by way of Detroit, Minn.—O. A. Ostlind.

From Milbank motor to Ortonville, thence north 20 miles to Graceville, 12 miles to Dumont, north 5 miles to Wheaton and on the Wheaton-Herman road 15 miles to Herman. Fergus Falls is 18 miles north of Herman, and traveling on to Detroit Lake is through Elizabeth, Pelican Rapids and Detroit Lake.



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MOTOR ROADS ABOUT LINCOLN, NEB. TOURING ROUTES THROUGH OMAHA AND ENVIRONS

FACTORY SERVICE NEEDED

Owner Relates Experiences With Motor Car Agents and Repairmen

MOLINE, Ill.—Editor Motor Age—The editorial in Motor Age, issue September 7, on "More Service Departments Needed," is outspoken and pertinent. It says, "Service departments are needed in many parts of the country by many companies because many of their owners are dissatisfied with the treatment they are receiving from so-called agents." To illustrate from my own experience, which thousands of your readers surely can duplicate: For the last 2 years I have run a car built by one of the pioneer motor car manufacturers of this country and who has one of the largest annual outputs.

The car was bought from the company's agent in this territory. But for any repairing to be done this particular agent had his men put in so much time and overcharged so much that after one or two experiences he got none of my business—nor of a good many others to whom he had sold cars. My car was guaranteed for 1 year against all defects in workmanship. About 2 weeks after the guarantee had expired I noticed a small crack in the waterjacket of the front cylinder, and in the middle of the summer freezing could not be the cause of the trouble. On cleaning all grease and dust thoroughly away, it was easily seen that there was a flaw in the casting, and the agent admitted as much; but the guarantee having expired he refused to take the matter up with the company. He insisted, on the contrary, on putting in two new cylinders, they being cast in pairs, or at least on having the crack welded at an expense of some $15. I turned down both propositions, got busy with a steel punch, and calked the crack in 15 minutes, it never has leaked a drop of water since.

At different times I took the car to different garages, and soon found out the truth of what was said a little further in the editorial: "But because the salesman's work is completed when he has sold and delivered the car, is no reason why the factory should cut loose from the owner and leave him a derelict, so to speak, at the mercy of every repairman or garage man in the locality, which repairman or garageman may be quite ignorant of the makeup of his car, so that when it is placed in his hands to make a repair or a replacement it is a ten-to-one chance whether the car emerges in better or worse condition."

And in the case you have your replacements made by another than the company agent, because you refuse to submit to overcharges, there is another way of fleecing the owner: Buying the new part from the agent, you simply pay the list price; but buying it through another garage, you pay, besides the list price also expressage, and moreover the charges for collecting the money for that part, which comes C. O. D. It looks as if the company wanted you to be completely at the mercy of its agents. It is not honest dealing, and you kick, but what's the use, except that the next time you or your friend buy a car you will give that company a wide berth?

Service departments are the only thing to remedy those evils. The time is fast passing when the craving for any machine, regardless of defects and regardless of the treatment accorded the buyer, left all the trump cards in the hands of the manufacturer, and allowed him to receive all your kicks with a blank smile of indifference. When the industry settles down to a firmer basis, and the manufacturer has to hunt for the buyer instead of the buyer wildly hunting for the car, only those manufacturers who have a keen eye for the satisfied buyer of their product, will be able to continue in the business. And those will be the ones who have been farsighted enough to provide service departments for their patrons.—Owner.

CHALMERS AIR PUMP

Elberton, Ga.—Editor Motor Age—In the air-compressing attachment of the Chalmers 36 described in the July 13 issue

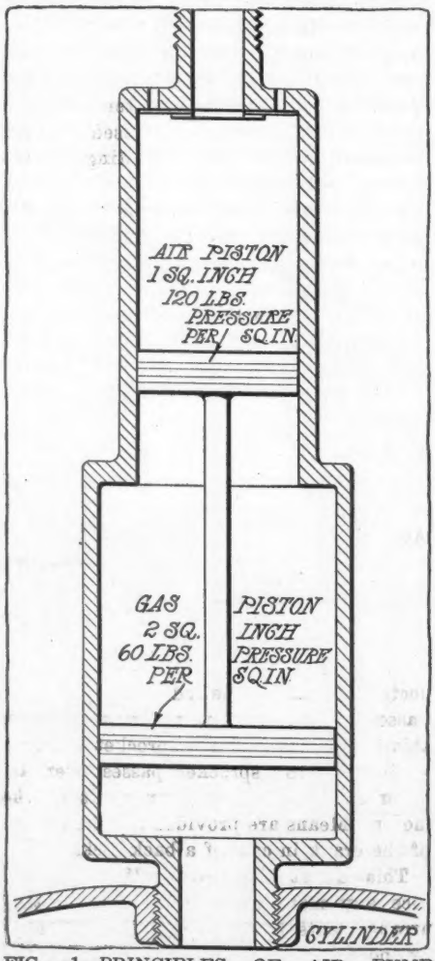


FIG. 1—PRINCIPLES OF AIR PUMP SHOWING INCREASE OF PRESSURE

The Reader

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired

of Motor Age, how is the air introduced into the cylinder without also admitting the mixture from the carbureter?

2—About what would be the maximum air pressure obtained using the compression of a 4 by 4 cylinder of a motor under favorable conditions? Could a higher gauge pressure than the normal cylinder compression be reached by connecting a tank for storage?—A. C. Smith.

1.—The compressed air is introduced directly into the head of the cylinder through a separate opening and does not pass through either the carbureter or inlet valve and therefore does not come in contact with the fuel.

2—The maximum air pressure usually carried is 150 pounds per square inch. If necessary a pressure higher than that of the normal cylinder compression can be had in the storage tank by making the cylinder of the air compressor smaller in diameter than the cylinder upon which the working gas acts. For the pressure in the two cylinders will be inversely proportional to their cross-sectional areas, but the quantity stored up will be directly proportional to their areas. To explain, suppose the gas piston, that is, the piston of the pump which is in conection with the engine cylinder is 2 square inches in area and the upper piston which compresses the air is 1 square inch in area and that the compression pressure in the motor cylinder is 60 pounds per square inch. There is then 60 pounds pressure acting on each square inch of the gas piston or a total of 120 pounds. Now since the air piston is rigidly connected to the gas piston, the former will have to pass on a pressure of 120 pounds, through its 1 square inch of surface. That is it will deliver a pressure of 120 pounds per square inch. The sketch, Fig. 1, illustrates the general principle.

Most pumps of this sort are made with the air piston smaller than the gas piston but the automatic release is set to stop filling the storage tank when the pressure in it reaches about 150 pounds.

SIZE OF FLYWHEEL

Dublin, Tex.—Editor Motor Age—Will Motor Age kindly answer through the columns of the Reader's Clearing House the following questions?

1—What horsepower will a four-cylinder

Clearing House

EDITOR'S NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated

motor with 4¼ by 4½ inch bore and stroke test out?

2—With the flywheel located on the front end of the crankshaft, what weight wheel should be used on the above motor? If a heavier wheel should be put on, what effect would it have on the power and running qualities?—Subscriber.

1—A motor of the above mentioned dimensions should test out around 28 or 30 horsepower at a piston speed of 1,000 feet per minute. Whether it will show more or less power depends chiefly upon the design, construction and the condition of the motor.

2—The heavier the flywheel the more even the torque and the greater the power at low speeds. The flywheel should weigh about 80 pounds.

ON "SURVIVAL OF FITTEST"

Madison, S. D.—Editor Motor Age—In Motor Age, issue July 13, the editorial on "The Survival of the Fittest" aptly illustrates the motor car situation of today. The manufacturer who caters to the public and not to his engineering department is the one who will dispose of his cars. It is a well-known fact that in many excellent cars there are some details of design that are not standard, if such a term is allowable. For instance: Nine out of ten motorists prefer the spark and throttle control on top of the wheel and yet there are many designers who still have these levers underneath on one or both sides. That the trend is towards the top control is evinced by the fact that one of Detroit's largest manufacturers of 30-horsepower cars comes out for 1912 with his cars so equipped, notwithstanding the fact that in previous years he has strongly advocated the control beneath the wheel.

Another unsightly thing some manufacturers persist in is in leaving part of the brake rods outside of the frame. This not only looks far from neat but makes an excellent place for women to catch their dresses on. Many cars never have been found wanting when the method of fastening fenders securely was considered, but how many there are, even at present, who fail to give the headlights and radiator protection from front wheel mud splash. By proper front fender design it is possible to keep a good deal of mud away from the front of the car and the rear of the body can be protected a great deal in this respect also.

A short time ago I was riding in the country with a doctor friend of mine in a popular car, when one of his rear fenders came off. This was the second time the fender iron had broken this season, and it certainly shows carelessness on the manufacturer's part.

There is one thing all manufacturers will have to come to sooner or later, and that is to enclose all valve springs. Years

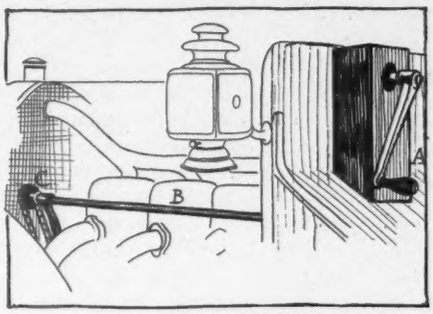


FIG. 2—S-W AUTOSTARTER

ago it was thought superfluous to enclose the half-time or the pump-driving gears, but designers realized that all moving parts possible should be protected. To keep the noise and grease in and the dirt out should be the slogan of engineers. There is just as much consistency in leaving the half-time gears exposed as there is in leaving the valve operating mechanism partially so.

Bonnet fasteners are another thing that need attention. I have met many cars whose design in this respect is weak and decidedly unmechanical. There are numerous other details that the amateur motorist can think of in this connection, and that have been mentioned in these columns before.—H. H. Fredenfeld.

S-W AUTOSTARTER

Plainfield, Ill.—Editor Motor Age—I have heard of a starting device for motors called the S-W autostarter. Can Motor Age tell me how it works?—E. H. P.

The starting device referred to is illustrated in Fig. 2. In this the motor is cranked from the seat, instead of from the front of the car as is usually the case. The crank A is mounted on the dash and connected by gears to the rod or shaft B which passes to the front of the motor. Upon this shaft is mounted a sprocket C and a chain over the sprocket passes over another sprocket on the crankshaft of the motor. Means are provided for the release of the crank in case of a back kick.

This cannot be called a self-starting device any more than the numerous other arrangements for turning the motor over by bodily force whether applied at the seat or in front of the car.

DIFFERS WITH CARPENTER

Reader Believes Extra Investment for Magneto Is Justified

Pontiac, Mich.—Editor Motor Age—I admire Mr. Carpenter's grit, but he is wrong in some of his ideas. I have been a repairman a number of years and would like to say a word for both sides of the question.

Like any part of a car each has its advantages. You have to invest more money in a good magneto than in a battery, but $150 is too high, and $25 for upkeep the first year is beyond all reason. It really is about 10 drops of oil every 1,000 miles. Magnets at the present time are lasting from 4 to 6 years at one charge and then all that is noticeable is difficulty at real low speeds. Cones and ball bearings last about as long. Platinum points are used in either case, so we need not mention them.

A high speed magneto to be used with a vibrator coil for each cylinder can be bought at about the same price as a good battery and is as good a piece of property, if not better, although it is a poor kind of a magneto, because you have to use vibrators, which means trouble and one cannot synchronize the firing. But when one invests a little more, about $100, and gets a positive-drive magneto with high-tension distributor and non-vibrating coil, if low-tension magneto, or without coil if high tension, then you have got something reliable and practically no upkeep cost and synchronized timing. Of course, you cannot light your car with a low-speed or high-tension magneto, this point being in favor of a battery.

A magneto does not generate current by friction and the Bosch booklet did not mean that. It meant a Bosch must be running to generate current, so if you want to start on a retained compression you must use a battery. Get a Wico catalog and you will see that that magneto will start a car on retained compression, or at least will make the spark, and do its part without the machine running, without cranking, or without a battery. You simply work your spark lever, which causes the armature to pass the magnets suddenly and if the motor, four or more cylinders, was stopped properly and retained its compression well it will start. Add a set of dry cells to the battery expense once in a while. When they run down it is sudden at the last and I do not believe Mr. Carpenter ever had it happen in places where I have, or he would say, "Oh, you magneto for me hereafter!"—J. A. Goodchild.

IN DEFENSE OF MAGNETO

Benson, Minn.—Editor Motor Age—We cannot all be of the same mind, and I have no doubt but what A. D. Carpenter believes the dry cell the best ignition. But I think not enough credit is given to the

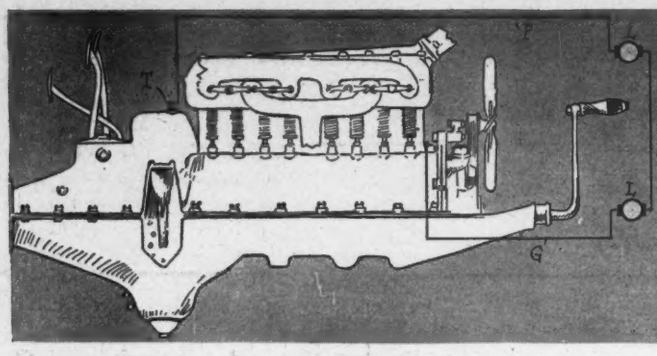


FIG. 3—CORRECT METHOD OF WIRING FORD MAGNETO FOR LAMPS—IN SERIES

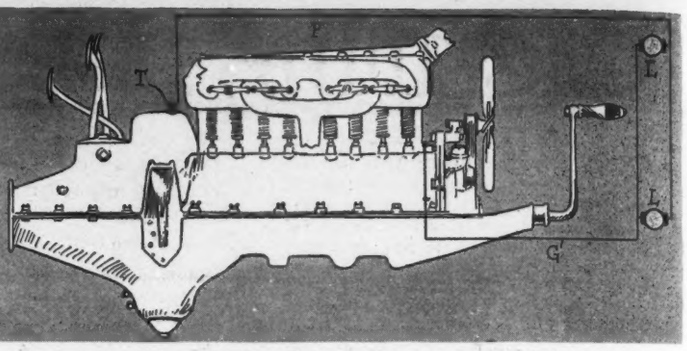


FIG. 4—INCORRECT METHOD OF WIRING LAMPS ON FORD MOTOR—IN MULTIPLE

car owner. It is possible now and then that one will not know much about magentos, but nine out of ten know the magneto is not a puzzle. Why is it so complicated, and what parts get out of order? I do not know of any part but the timer and any and all timers will get out of order. It is true that on many magnetos dry cells are used to start and yet many cars can be started from the magneto by advancing the spark.

Admitting that now and then a magneto will need to be magnetized, I have found in the past 3 years three magnetos that had to be magnetized. It cost $1, plus the express each way. Twenty-two months ago I put on my car a low-tension magneto, and I start my motor on the magneto with half a turn of the crank. I have tried dry cells. The timer is the same and the magneto gives more power than for ignition. My magneto furnishes electricity for headlight. True, at low speed and on high below 10 miles an hour the light is not very bright, yet it is sufficient to see all obstructions. The faster I go the better the light. Between 15 and 20 miles an hour I have the best light. At 30 miles an hour I can see the road one-quarter mile ahead. I never have touched the magneto at all; it is like a new one, and gives the best of ignition and the best kind of a light. I have ridden 8,405 miles and burned out four 16½-candlepower lamps, or $2.40. If there is anything cheaper I would like to know it. I do not want a $150 magneto or a cheap one. The one I am using retails at $40 and is worth a great deal more than many storage batteries or dry cells.—J. B. A. Benoit.

ECONOMY AND THE ACCELERATOR

Caney, Kan. — Editor Motor Age — Through the Readers' Clearing House will Motor Age express its opinion relative to the following: I have been informed by an expert demonstrator and several testers that the mileage obtained from one gallon of gasoline, when driving with an accelerator, may be doubled by driving altogether with hand throttle control. I have been driving a motor car for the past six or seven years and drive almost constantly with the accelerator. I understand that suddenly opening the accelerator wide is hard on a motor but cannot see where the additional mileage can be obtained. I would like also the opinions of other drivers who may be readers.—A Reader.

While it is true that the use of the accelerator results in a lowered economy, it hardly is probable that discontinuing it would double the mileage per gallon. When the motor is running at a comparatively slow speed on partially closed throttle it requires a certain length of time to speed up, owing to its inertia and that of the car when the throttle is suddenly opened, as with the accelerator. Thus the increased consumption of gasoline does not result immediately in a proportionate increase in speed and in distance covered, causing greater consumption per mile.

Whereas, if the throttle were opened slowly, so that the motor constantly received its most economical charge as it speeded up all the gasoline would show its full economy per charge. Further, the increased strength of the explosions when the throttle is suddenly opened, as with the accelerator, when the motor is running slowly induces strains throughout the car that wear the bearings and other parts, causing friction and lost motion, with a consequent loss in efficiency. Nevertheless the effect of the accelerator does not seem to be sufficient to reduce the mileage per gallon one-half.

WIRING DIAGRAM WRONG

Kansas City, Mo.—Editor Motor Age—On page 26 of the issue of Motor Age of August 24 is shown a wiring diagram for electric lights working on a Ford magneto. The accompanying explanation recommends 10-candlepower bulbs wired in series, but the sketch shows these lamps wired in multiple, which is not advisable on Ford magnetos. Also in the explanation it is said that the reason it is not practical to use a storage battery in connection with the magneto is the difference in voltage.

The principal reason why the magneto and the storage battery never should have any connection whatsoever is that the magneto generates an alternating current and a storage battery uses a direct current. The storage battery being in any way connected with the Ford magneto will ruin the magneto even if the connection is for ever so short a time. I hope this correction will be of assistance to Ford owners.—Shop Foreman.

The series 6 wiring recommended by Shop Foreman is shown in Fig. 3, while the incorrect multiple wiring is reproduced in Fig. 4.

FOR POLISHING BODIES

Huntington, W. Va.—Editor Motor Age—Although not the owner of a motor car, I am an interested reader of Motor Age. I have read with considerable interest the recent articles concerning the finish of cars and the various methods to restore same when dulled. Perhaps the following formula will be of value to car owners who have suffered this misfortune. It is known as piano polish:

Powdered rosin	1 oz.
Gum shellac	4 oz.
Gum camphor	1 oz.
Alcohol, denatured	1 pt.
Ether	1 oz.

Mix and dissolve, then add:

Turpentine	1 pt.
Linseed oil (raw) q. s. ft.	8 pt.

Apply with soft cloth and rub to a polish with woolen cloth or chamois.—J. M. L.

WORKING OF AMPLEX MOTOR

Pleasanton, Neb.—Editor Motor Age—Through the Readers' Clearing House kindly answer the following questions:

1—Will an engine get hot enough to damage itself if the radiator is full and the pump is working?

2—What is the use of the torsion tube?

3—Please explain the working of the Amplex valveless motor.

4—What ignition and what kind of a carbureter does the four-cylinder Reo have?—Reader.

1—Yes. An engine will get hot under these conditions if the radiator or water jackets are incrusted with deposits or if the spark is retarded too much or the cylinders fail to get sufficient oil.

2—When the turning moment of the shaft is transmitted to the bevel gears in the rear axle housing, thus causing the two shafts within the rear axle to revolve the road wheels, there is an equal tendency of the rear axle housing to turn round. Also when the brakes are applied there is a twisting stress or torque which tends to turn the whole system about the rear axle shafts. It is to prevent this that

torsion tubes and torsion rods are applied.

3—The Amplex valveless motor is of the two-cycle type. It receives its gas, explodes its gas, discharges it and delivers its power in one upward and one downward stroke of the piston. Figs. 5 and 6 are sectional views of the motor showing the cylinder and construction and the location of transfer port and pipe, piston, connecting rod, exhaust and admission ports, crankshaft and motor base. In Fig. 5 the piston, P, is shown at the top of its stroke, while in Fig. 6, the piston is at the bottom of the stroke. The intake manifold is shown at I, the exhaust at E, and the spark plug at X.

Referring to Fig. 5, the gases are under compression and the piston is in firing position, ready for the first stroke. Immediately upon combustion taking place, the piston travels downward delivering the power stroke. In Fig. 6 the piston has moved downward to the bottom of the cylinder on its power stroke and has uncovered the exhaust port, E, allowing the burnt gases to escape. The piston immediately afterward uncovers the transfer port, B, through which is forced the fresh charge of gas from the crankcase, through the passage marked C. In this passage is located the back-firing screens, M, which prevent back-firing or popping back in the carbureter or crankcase. The fresh gases are forced to travel upwards as indicated by the arrows, by means of the deflector, D, cast on the piston head. The fresh gases fill the cylinder, driving out the burnt gases. This completes the first or downward stroke and the upward or compression stroke is commenced, at the end of which the piston again is in the position shown in Fig. 5.

On the upward stroke the piston performs the double function of compressing the gases above the piston head and of forming a partial vacuum in the crank chamber. Just before reaching the top of the upward stroke the piston uncovers the intake ports, A, which allow the gases to travel from the carbureter through the intake manifold, I, into the crank chamber. When the piston has reached the top there is a charge of gas compressed above the piston ready for firing and a fresh charge in the crank chamber. The opening marked S is for the connection of the pipe for the starting device. The cranks are set at 90 degrees apart and arranged to fire in 1-3-2-4 order.

3—The 1911 Reo cars have a dual ignition system comprising a low-tension magneto and storage battery; the make of the magneto is to a certain extent optional with the purchaser. Either a Reo or Stromberg carbureter is fitted.

IN A PECK OF TROUBLE

Carrington, N. D.—Editor Motor Age—Will Motor Age, through the Readers' Clearing House, give me some of the causes for a 1910 Hupmobile motor missing fire? The car in question has been missing since it first came out. Have had it in the hands of most every motor car expert in this country, some eight or more in number. I have tried out four different carbureters. I have tried several makes of spark plugs and have put in full new set of intake and exhaust valves and it is missing still. This car has run about 4,000 or 5,000 miles and have in the third drive shaft pinion and the second set of differential gears. What is the cause of those gears giving way?—W. E. H.

The Hupmobile will misfire from any of the causes that make other motors miss. Some of these causes are: Faulty ignition, fouled spark plugs, carbon in the cylinder, badly seated valves, bad adjustment of carbureter, leak in intake pipe, very bad timing of the valves.

So far as the driving gear and differential trouble is concerned it is impossible to say what the matter may be, as you do not state in what way they gave out. If they have simply worn it is possibly due to lack of lubrication or having them meshed too deeply. If they are broken the diagnosis will depend on the location and character of the fracture.

There are many of these cars in satisfactory service. It would seem that some of the trouble may be due to the way the car is run. A card to the factory will bring complete instructions for the care of the car.

CHICAGO'S NEW LAW

Chicago — Editor Motor Age — Please publish a digest, if not the whole, of the city ordinance recently passed relative to horns, muffler cutouts, etc. Also tell what time in September and where in this city the examining board meets for the examination of applicants desiring to qualify as chauffeurs under the law which went into effect July 1.—M. A. Reynolds.

The ordinance relative to horns and cutouts is brief and is given herewith:

"Section 1. Every motor car, motor vehicle or motor cycle, while being used upon the streets, alleys and public places of the city of Chicago, shall be provided with a suitable bell, horn, or other signal device and it shall be unlawful for any person to use what is commonly known as the siren signal or any device similar thereto; and it shall be unlawful for any person operating any motor car, motor vehicle or motor cycle to make or cause to be made any loud or unnecessary noise with any such bell, horn, or other signal device, or to use such bell, horn or other signal device, except as a warning of danger.

"Section 2. Any person violating any of the provisions of this ordinance shall be fined in a sum not less than $5 or more than $50 for each offense.

"Section 3. This ordinance shall be in full force and effect from and after its passage and due publication."

No time or place has as yet been designated for the examination of chauffeurs.

FIGURING HORSEPOWER

Chadron, Neb.—Editor Motor Age—Through the Readers' Clearing House will Motor Age explain the different way to figure the horsepower of a gasoline motor, from the bore of the cylinder?—Subscriber.

There are many different formulae for figuring the horsepower of a motor, but there is only one officially accepted in this country. That is the one known as the S. A. E. formula, formerly called the A. L. A. M. formula. It is based on an assumed piston speed of 1,000 feet per minute and is usually expressed in this way:

$$\text{H. P.} = \frac{D^2 \times N}{2.5}$$

where D is the diameter in inches of the cylinder bore and N is the number of cylinders. Multiply the bore by itself and then by the number of cylinders and divide the product by 2½. It will be noted that the stroke is not taken into consideration directly, nor is the speed.

A formula which is used to some extent when it is desired to use the length of stroke and the revolutions per minute of the motor is the following:

$$\text{H. P.} = \frac{D^2 \times S \times R \times N}{1{,}800}$$

where D is the bore in inches, S is the stroke in inches, R is the speed in revolutions per minute, and N is the number of cylinders.

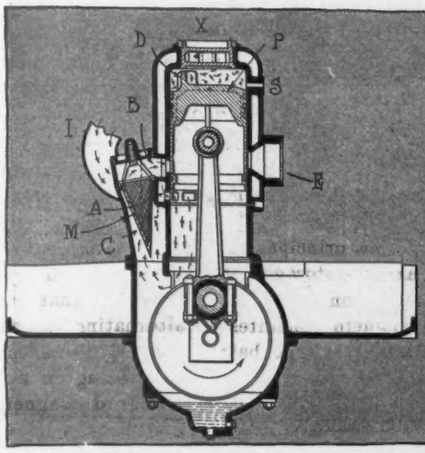


FIG. 5—SECTIONAL VIEW OF AMPLEX MOTOR. PISTON AT TOP OF ITS STROKE

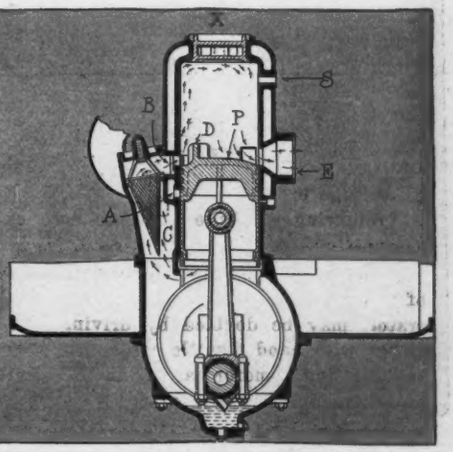
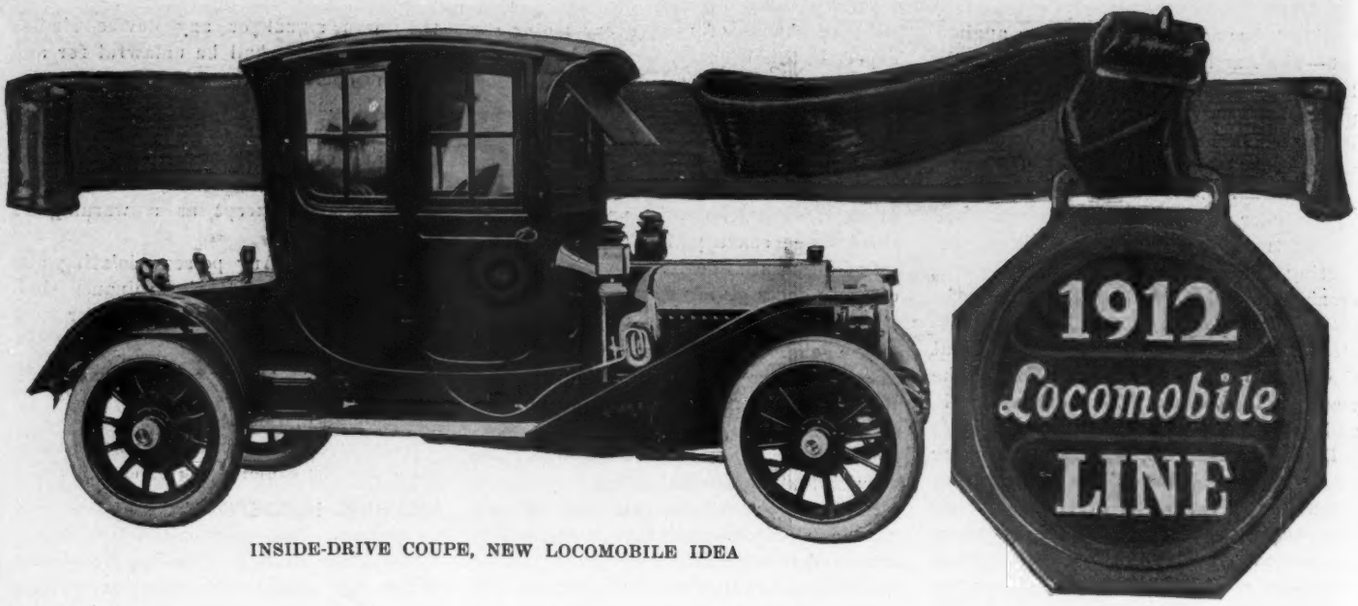


FIG. 4—AMPLEX TWO-CYCLE VALVELESS MOTOR. PISTON AT BOTTOM OF STROKE

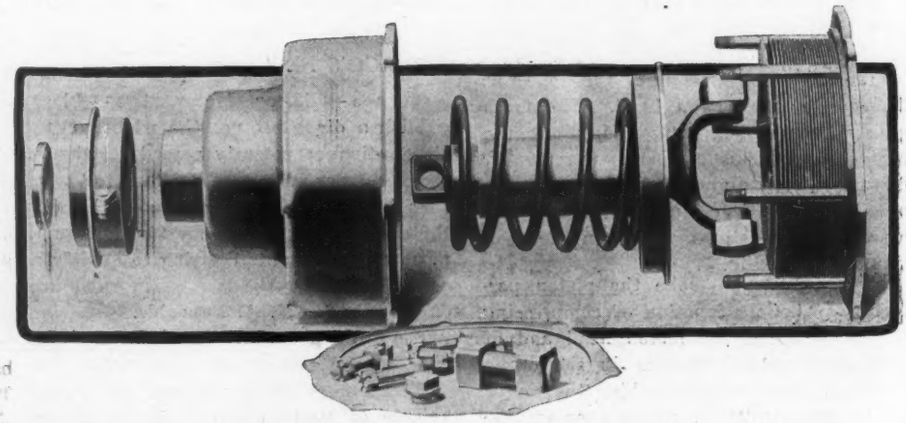


INSIDE-DRIVE COUPE, NEW LOCOMOBILE IDEA

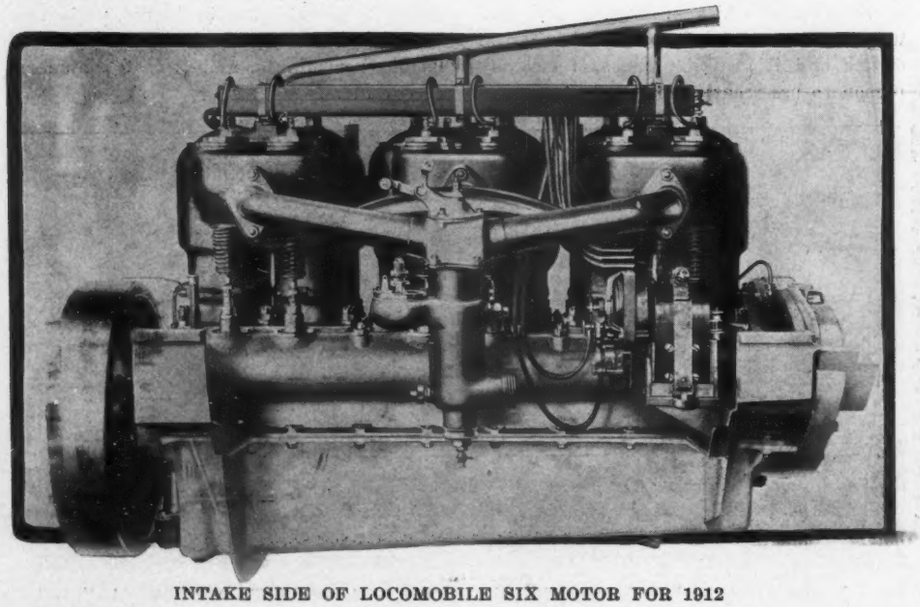
For the Coming Season the Locomobile Company Will Continue Its Line of Six and Four-Cylinder Cars the Former Designed to Be the Leader—Few Mechanical Changes in the Two Chassis Models Offered Buying Public for 1912

SIXES and fours again, with the former the leader is the program mapped out for 1912 by the Locomobile Co. of America. As before there will be only the two chassis, the six, known as the 48, and the four as the 30. Each of these is offered in six body styles, giving the buying public a wide range of choice which includes the seven-passenger, the four and five-passenger torpedoes, the limousine, landaulet and berline in the six and in the four-cylinder line the five-passenger touring car, the four-passenger baby tonneau, the four- passenger torpedo, the inside-drive coupe, the landaulet and the limousine with the standard and berline types of bodies. Of this array the inside-drive coupe and the berline are new body types added to the line for the new season.

The Locomobile company is satisfied to "let well enough alone" for 1912 and in consequence of the feeling that both the six and the four fully established their reputations in 1911, there have been few mechanical changes made. Instead, the factory at Bridgeport, Conn., has devoted most of its attention to making the six-cylinder more luxurious as to body appointments and upholstering.

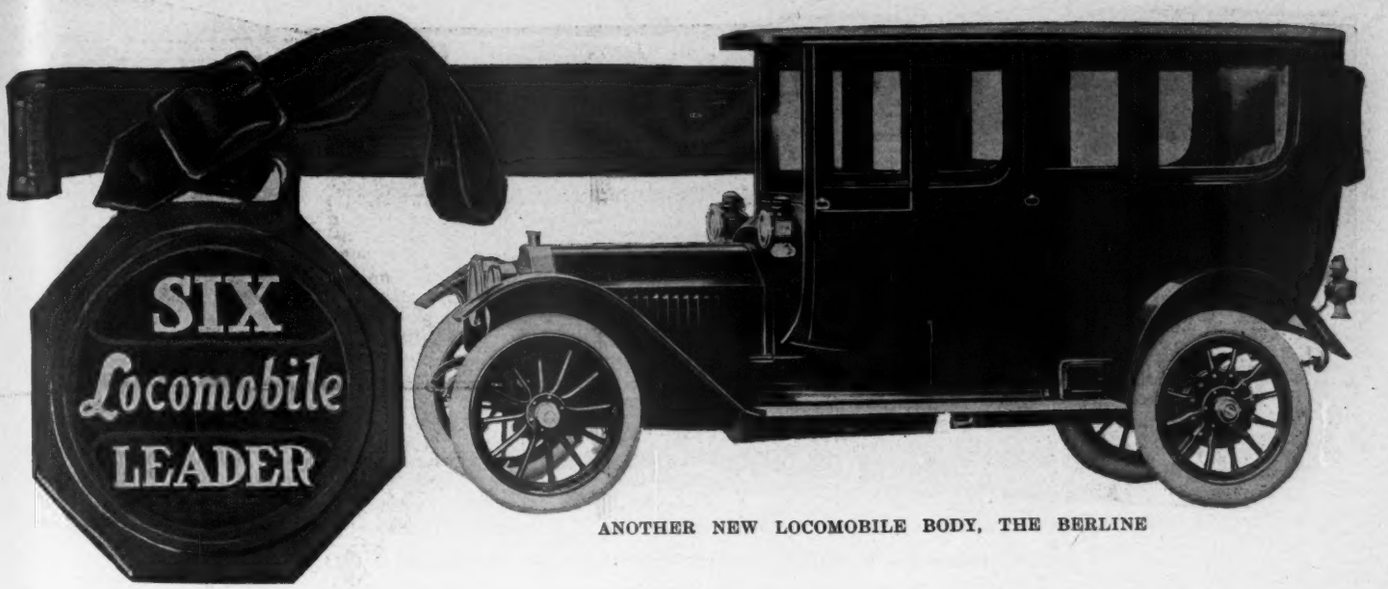


LOCOMOBILE CLUTCH IN ITS 1912 FORM



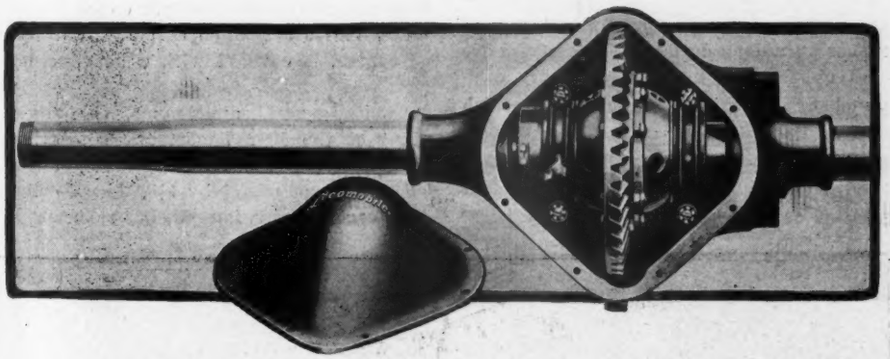
INTAKE SIDE OF LOCOMOBILE SIX MOTOR FOR 1912

To the man looking for mechanical changes, the most noticeable departure from former construction is to be found in the rear axle and differential housing. As before, the live axle is of the full floating type which serves only to turn the rear wheels and carries no part of the load. The axle housing, however, is now a one-piece steel casting. This is a decided change from the two-piece rear axle of former years, in which design it was necessary to remove the connecting bolts before the differential could be reached. In the new design, the weight is carried on a single casting, while a large opening at the extreme rear ordinarily covered by an aluminum cap, enables the parts of the differential to be reached easily. In fact,



ANOTHER NEW LOCOMOBILE BODY, THE BERLINE

Comfort of the Passenger Has Been the Chief Consideration and the Body and Upholstery of the Six-Cylinder Show That This Important Point Has Not Been Overlooked—Six Body-Styles Fitted to Both 30 and 48-H.P. Chassis Models



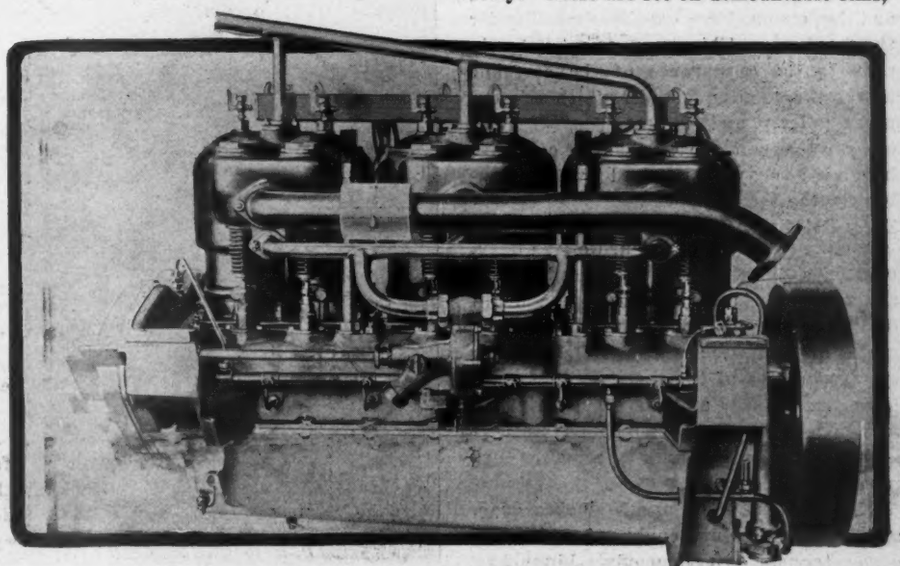
MECHANISM OF THE REAR AXLE USED ON 1912 LOCOMOBILES

by removing four bolts that hold the bearings in place, the entire differential unit may be taken out through this opening in a remarkably short space of time. It is, of course, necessary first to withdraw the two parts of the live axle so that the squared ends rest outside of the differential unit. Alloy steel tubes are pressed into the ends of the axle housing to form the weight-carrying portion of the dead axle. Although a pressure of several tons is used to force these into place, rivets that pass through both the steel casting and the tubing are employed as an extra precaution. There is no brazing necessary at these joints, and consequently the use of alloy steel is rendered possible.

When the car is loaded, practically straight-line drive between the transmission and differential is obtained, as the propeller shaft revolves at an angle of only about one degree with the crankshaft, and thus the universal joints are given but very little work to perform. Notwithstanding this, however, a feature of Locomobile construction lies in the large bearing surfaces with which the universal joints of the power transmission shafts are designed. There are four of these universal joints, two between the clutch and transmission and two at the ends of the propeller shaft between the transmission and the differential.

The spring shackles and all other points of wear not supplied with an automatic lubricating system are provided with grease cups, while an auxiliary oil tank under the driver's seat and which is furnished with a shut-off cock assures a sufficient quantity of engine oil for all emergency purposes. The fuel is supplied by the gravity system and the main gasoline tank holds 25 gallons.

The six-cylinder Locomobile has a wheelbase of 135 inches and is provided with 36-inch by 4½-inch and 37-inch by 5-inch tires on the front and rear wheels, respectively. These are set on demountable rims,



EXHAUST SIDE OF THE LOCOMOBILE SIX MOTOR FOR 1912

SEVEN-PASSENGER TOURING CAR ON SIX-CYLINDER LOCOMOBILE CHASSIS

same diameter and the tires and rims are interchangeable, only one size of extra tire need be carried.

Grace of outline and symmetry of design is shown in the six with its straight sides with the flush fore and rear-doors. The back of the rear seat is 2 inches higher than that of the one in front, and neither projects more than 5 inches above the sides and doors that form a continuous straight line from dash to rear of tonneau. The concealed hinges on which all doors are mounted serve to keep the exterior of the body free from any metal projections that would tend to destroy the color scheme or symmetry of the outline of the car. The lock on each door is operated only by means of a top lever, and thus handles also are eliminated from the outer surface of the body.

The running boards, too, have been kept clear of all equipment or attachments. This has been brought about by carrying the two spare tires at the rear of the body, held in place by brackets against the back of the tonneau; by stowing the tools and battery under the floor boards at the back, and by placing the gasoline tank under the front seat. This arrangement not only adds to the appearance of the car, but leaves the running boards, which are unusually long and commodious, free to carry such suit cases, trunks, or other baggage as may be required by the members of the touring party.

Body Details of Six

Coming to the interior finish of the body, one finds that on the six the back of the rear seat is 10 inches deep—a depth composed only of springs and long, white, curled hair. There are three rows of 8-inch springs in each of the three sections composing the back, and as each spring is fastened to a strong canvas backing, it is kept in position and is rendered unusually resilient.

The cushions, also, are 10 inches deep, and the long springs enable the occupant of the tonneau to accommodate himself to any sideway and horizontal motion, as well as to whatever vertical movements may be communicated to the car. These cushion springs are especially constructed with a spring-metal bottom which serves to hold each in position and prevent any side-tipping. The facings of the cushions are made with a pleated front to allow perfect freedom of motion of the springs.

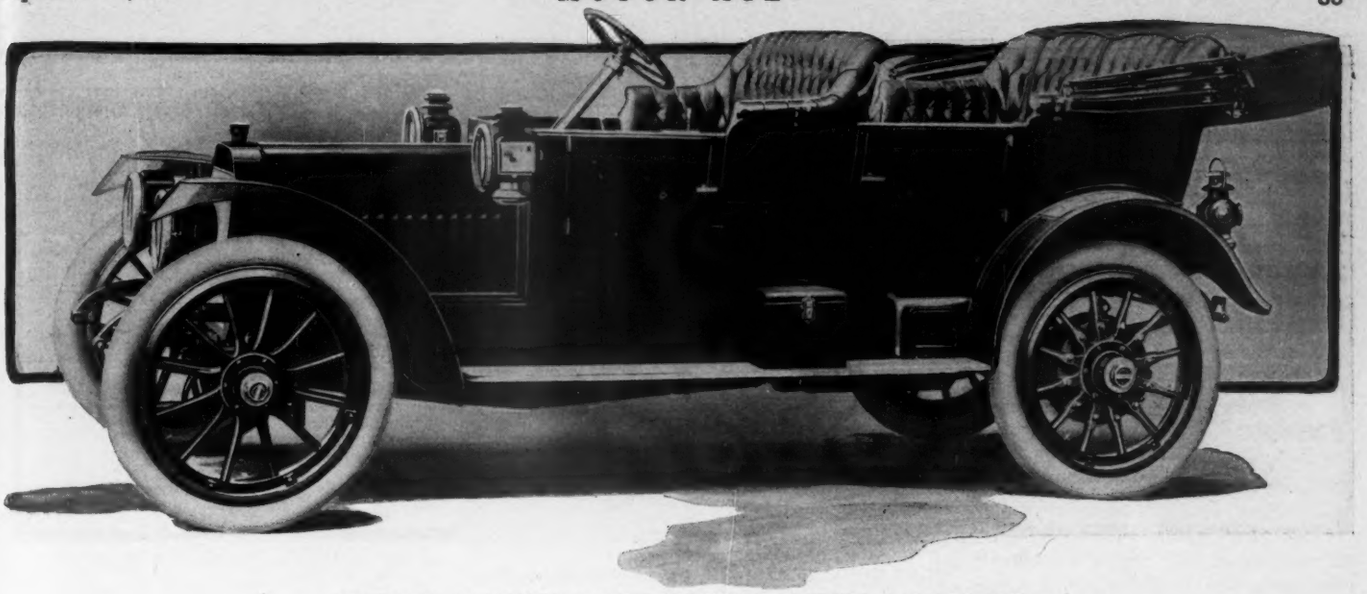
Seven-Passenger Touring Car

The seven-passenger touring car is provided with the usual folding seats, although those on the new model are of rather an unique design. The bottoms are well upholstered, but the backs are composed of a flexible leather strip which adjusts itself to any position that the occupant desires to assume. The hinged portion of the seat is automatically locked in position as soon as it is opened.

The interior of the tonneau is free from brass fittings, with the exception of the foot and coat rails. The latter, by the way, is unique in that it may be shoved into its sockets in the back of the forward seat and thus the distance which it projects may be regulated to suit the nature of the number of the wraps that it is to carry. With the exception of the back of the front seat, there is no exposed metal in the tonneau, as all parts of the interior that are not upholstered are covered with pieces of leather-bound carpet. The floor, of course, is covered with a heavy cocoa mat.

In its general appearance, the power plant of the 1912 Locomobile six is but little different from that of its predecessor. The same type of 4½ by 4½, T-head cylinders, cast in pairs, is used, but refinements

INTERIOR VIEW OF LOCOMOBILE LIMOUSINE, SHOWING AUXILIARY SEATS



MODEL 30 LOCOMOBILE FOUR-CYLINDER TOURING CAR FOR 1912

in design enable the motor to develop a brake horsepower of 65, as against the S. A. E. rating of 48⅛.

The crankshaft is mounted in seven heavy bearings. The crankcase is of government manganese-bronze. To the bottom of this crankcase is attached the aluminum pan which contains the main oil reservoir. A spiral gear on the rear end of the camshaft drives the rotary oil pump, which forces the lubricant from the well into a T-connection. One end of this connection is attached to the main feed pipe which passes along the side of the crankcase. From this line, an individual pipe passes to each crankshaft bearing, and to all of the intermediate camshaft bearings, as well.

The second branch of the T connects with a pipe inside of the aluminum pan. At the bottom of its stroke under each connecting rod is a trough into which the scoop on the lower side of each connecting road bearing dips. A hole in the oil feed pipe at each point where it passes over the end of the trough keeps the latter supplied with lubricant, while any excess overflows into the reservoir below.

Lubrication of Locomobile

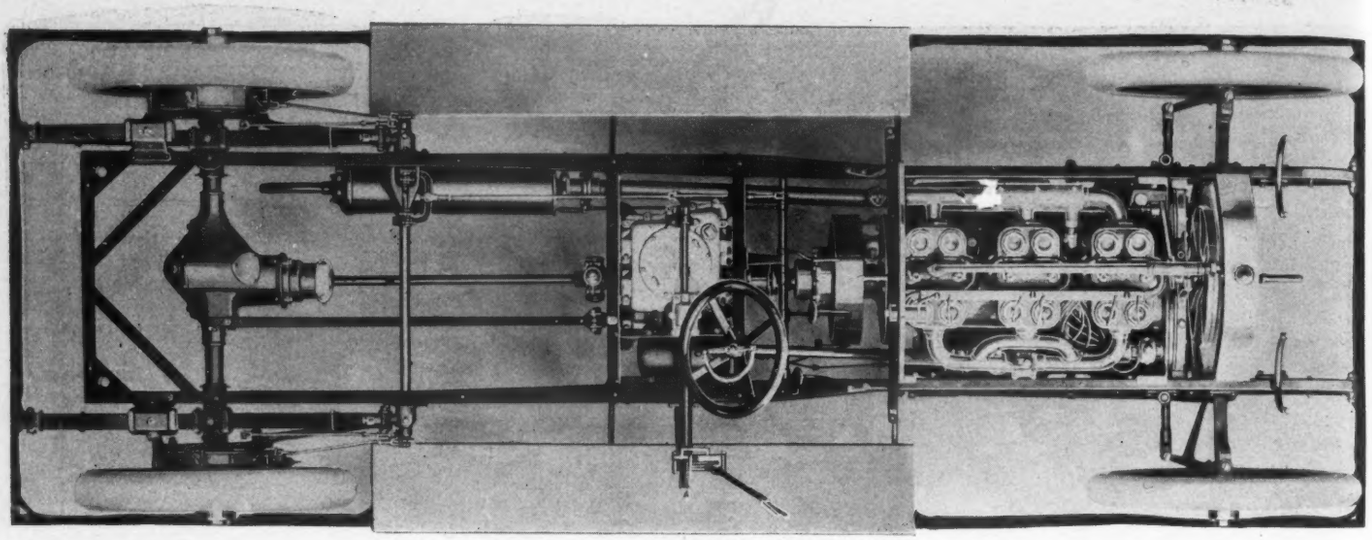
The piston is oiled by the splash from the troughs, and in order to prevent an undue amount of oil from reaching the cylinders, baffle plates are provided over the openings through which the connecting roads reciprocate. Inasmuch as the oil in each trough into which the scoop dips cannot exceed a certain depth, and as the baffle plates limit the size of the opening through which the oil may be sprayed, the annoyance from a smoking car is eliminated—and yet all parts of the motor are assured of a sufficient amount of lubrication.

The use of spiral heat-treated chrome-nickel steel gears in the front train has been continued, with a slight improvement in the method of attachment to the ends of the camshafts. In order properly to secure the large gears to the camshafts, each of the latter is made to terminate in a large, flanged face-plate which fits into a corresponding recess in the hub of the gear. Four holes then are drilled through the gear and plate near the periphery of the latter, and are tapped to accommodate cap screws. When these cap screws are screwed in place and are prevented from shaking loose by a continuous wire passing through the heads of all four, a mounting is obtained that holds the gear permanently in line. It will be seen that, as the large face plate enables the cap screws to be placed at a considerable distance from the center, an unusually large mounting surface is afforded with but little attendant complication or increase in weight of the train of gears.

INTERIOR VIEW OF LOCOMOBILE LIMOUSINE, SHOWING AUXILIARY SEATS FOLDED

Locomobile Cooling System

In general, the cooling system and the piping are practically the same as those used on the previous models of this car, but there are a few changes. The radiator is large, and the orifices are of generous size, thus combining ample cooling surface with the opportunity for the passage of a large quantity of air. The bronze circulating pump is of the centrifugal type, and is driven by a gear meshing with that on the exhaust valve camshaft. The fan pulley is mounted on an eccentric bearing by means of which the distance between it and the driving pulley on the end of the pump shaft may be varied in order to regulate the tension on the belt. This is done by applying a wrench to the large nut that is cast integral with the eccentric bearing. The inside of the hub of the fan is grooved to accommodate a flange on its bearing



PLAN VIEW OF CHASSIS OF LOCOMOBILE SIX

which serves to prevent excessive side-play and assures perfect alignment of the two pulleys.

Another refinement to be found on the exterior of the motor is the coupling between the armature shaft of the magneto and its driving shaft. Although this is of the same form of universal jaw coupling as has been used formerly, it is encased in an aluminum covering in the new models, and is packed in grease.

All parts of the carbureter are designed and manufactured at the Locomobile plant. This carburetor is of the float-feed type and employs a single tube through which passes the gasoline for all speeds of the motor. In other words, the functions of the needle valve and auxiliary gasoline supply are performed by this single tube. In addition to the cone-shaped nozzle at the end, the pipe is perforated at the center of the strangling tube, and thus the supplementary openings for the low speeds of the motor are furnished. The vaporizing chamber through which this tube passes is several inches long, and consequently the mixture has opportunity to be well carbureted before reaching the intake manifold.

Construction of Locomobile Carbureter

The action of the auxiliary air valve is simple and is controlled by a dashboard lever which serves as a convenient and efficient carbureter adjustment under all conditions of fuel and weather. The dash control lever operates on a notched quadrant and communicates with a bell-crank lever actuating a secondary spring on the auxiliary air valve stem. This secondary spring opposes the action of the main spring on the air valve stem, and thus by varying the tension on the former through the position of the lever, the stiffness of the action of the auxiliary air valve may be regulated to a nicety.

The carbureter is water-jacketed and is connected with the cooling system of the cylinders, while the intake air pipe also is connected with a jacket surrounding the exhaust manifold. By means of a stop cock and valve, the hot water and hot air supply may be regulated, independently, and thus almost any combination of vaporizing conditions may be obtained that enable the greatest variety of grades of gasoline to be used. The float stem is nickel-plated in order to prevent the action of rust or other corrosion.

The Locomobile Control

The control of the new model Locomobile is much the same as that used previously, the four-speed selective transmission being of the design that has been employed during the past six seasons. The weight of the gears, shafts, and sliding rods is carried in the transmission case proper, which is of manganese-bronze supported on cross-members by means of four lugs. The transmission may be said to consist of but three units, any one of which may be removed from the case independently of the others, and thus individual gears and bearings are rendered exceedingly accessible. The gears are shifted by means of the conventional side-lever operating in an H-quadrant. The reverse, however, instead of being obtained in a third slot, is located at the extreme end of the outer slot and is separated from the adjoining speed position by a lug beyond which the lever can pass only after depressing the release on the top of the handle. The pedals are the same as formerly, but a slight change is to be noticed in the shape of the tread of the accelerator. The foot tread of this accelerator consists of two knurled rollers against which the sole of the driver's foot rests, and which turn when the foot is depressed. Thus, while the position of the shoe against the accelerator is necessarily changed, there is no danger that the foot will slip off, as the sole rolls on the tread, instead of slides, as is the case with ordinary flat-tread accelerator.

The clutch used on the six-cylinder car is of the steel disk type, running in oil, and forms a unit with the flywheel. Its location and manner of installation enable any part of the clutch and all of the disks to be removed without disturbing any other portion of the chassis.

The design and method of construction of the radius rods and the torsion rod, also, are interesting. There is one of the former at each side extending from the brake drums to the side members of the frame. The rear, or large end, of the radius rod terminates in a disk that is attached to the rear axle and forms a tight-fitting and dust-proof cover for the brake drum. The torsion rod on the new model is of pressed steel, instead of the tubular form, as was used previously, and as the small forward end is mounted midway between two heavy springs in a vertical cylinder, this torsion rod, as well as the two radius rods, serves to relieve the springs of all transmission of power. Consequently, as there is no pull or twist exerted upon them, the springs have only to perform their function of supporting the body of the car.

The leaf springs upon which the body is supported are of the half-elliptic type in front and three-quarter elliptic in the rear, the former being 38 inches long by 2 inches wide, while the rear springs are 10 inches longer and of the same width. These springs are made from alloy steel.

MOTOR CAR LITERATURE

The Goodyear Tire and Rubber Co., Akron, O., has published a three-page folder telling all about its inner tubes, and also draws attention to the Goodyear inner tube bag for carrying extra tubes.

A new car on the market this season is the Nyberg, manufactured by the Nyberg Automobile Works, Anderson, Ind., and a catalog from this company describes in detail the mechanical features of the car with line drawings.

The Marvel Carbureter Co., Indianapolis, Ind., has published a booklet which it calls "Inside Information About Gasoline," which deals with the subject in conjunction with the Marvel carbureter.

A TOPIC of vital interest in all lines of business today, and to which much thought and study is being given, is that of salesmanship. One of the latest books on this subject is "Practical Salesmanship" by Nathaniel C. Fowler, Jr., and is full of helpful advice to any young man entering the business field.

In brief, the author says personality counts for much, coupled with good nature. The salesman must know his goods thoroughly; he must be able to talk the goods; he must have a general knowledge of good business principles, also a working familiarity of the business methods of one's competitors. He must have the ability to talk of something besides shop; the ability to diagnose a customer or to size him up, and the ability to play a double part—one in the interest of his customer, while being thoroughly faithful and profitable to the house he represents. All these and many other qualifications are enlarged upon in an interesting manner and cannot fail to be a source of helpfulness if applied. Summed up, one must be thoroughly accomplished in many things if one reaches the top notch. Appended are short statements from representative business men of recognized success, who have been or are successful salesmen, or are sales managers of large business houses. Little, Brown & Co., Boston.

A Book on Italy

"The Ideal Italian Tour" by Henry James Forman is a book written for the convenience of travelers whose time in passing through Italy is somewhat limited. It is a guide book, but clothed with interesting legends, and facts of history in a way that makes statistics attractive. It is not a voluminous treatise, but tells in a

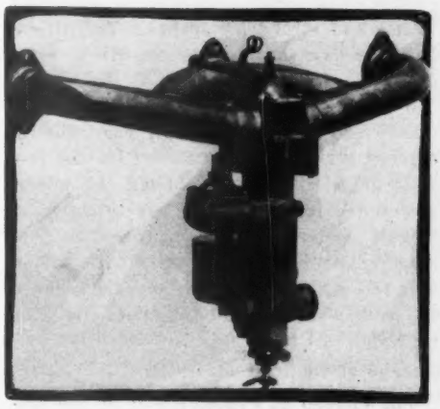
compact form what is to be seen. The author begins his tour at Naples, then comes Capri and Sorrento; there are five chapters upon Rome, following with Florence, Sienna, Ravenna and the Tuscan cities. The book is excellently illustrated and in size and style well suited to the traveler's space and needs. Houghton-Mifflin Co., Price $1.50.

Monoplanes and Biplanes

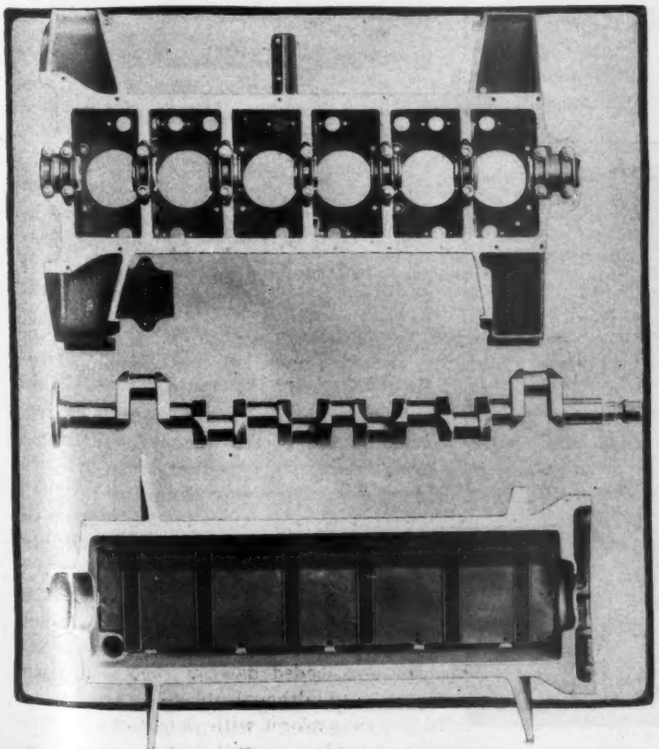
Of the many books that have already been written on the new topic of aviation, this fascinating subject has been handled largely either in a very popular and more or less incomplete manner, or in an atmosphere of mathematical theory that puzzles beginners. It would seem, therefore, that there is a demand for a work treating of the theory only in its direct relation to aeroplane design and completely discussing the prevailing practices in the construction and operation of these machines.

"Monoplanes and Biplanes" by Grover Cleveland Loening, is a new work that deals with the subject in precisely this manner. The author is recognized as something of an expert in this line and has presented the subject in a thorough and remarkably well-arranged manner. The work is divided logically into three parts treating respectively on the design of aeroplanes, descriptions of notable types, and a comparison of types. After the usual historical introduction the general design of heavier-than-air machines is taken up, the theory of aerodynamics being treated as simply and completely as this rather difficult subject will allow. At the end of this section is given a complete example of the design of an aeroplane which should prove of value to those engaged in the actual construction.

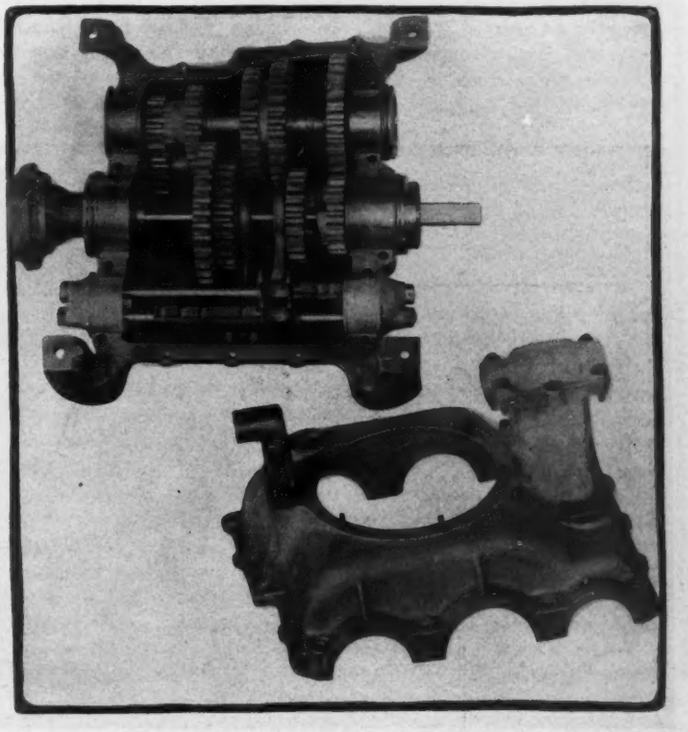
In part II are given detailed descriptions of leading types of machines, supplemented by photographs and diagrams reduced to the same scale to enable graphic comparison. In the last part of the book the successful types are compared and discussed and conclusions drawn. The two last chapters are somewhat unusual; one being a discussion of the causes of and remedies for various aeroplane accidents, while the closing chapter deals with the variable surface aeroplane, a pet theory of the author and which he believes to be the next step forward in aeroplane development. Munn & Co., Inc., New York. Price $2.50.



LOCOMOBILE CARBURETER AND INTAKE MANIFOLD



BASE AND CRANKSHAFT OF LOCOMOBILE MOTOR



FOUR-SPEED GEARSET OF LOCOMOBILE

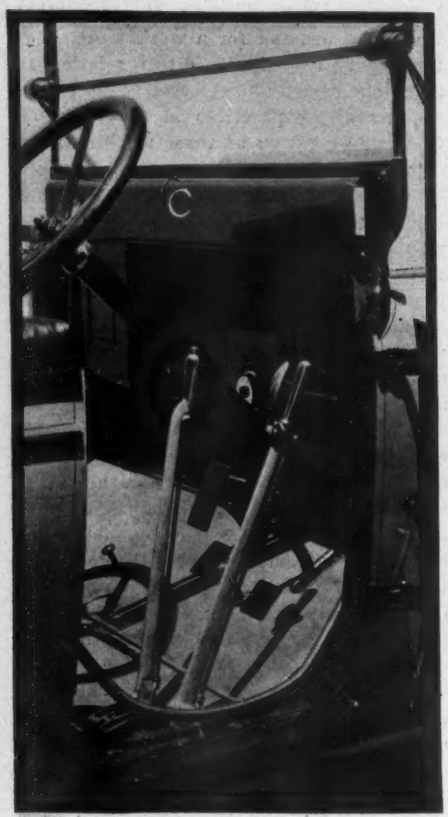


FIG. 1—CONTROL FEATURES OF PIERCE-ARROW FOR 1912

The Pierce-Arrow Models

Fore-Door Bodies On All Chassis With Inside Control Levers—Power Tire Pumps Standard

CLUTCH BRAKE ADDED TO ALL THREE 1912 MODELS

THE settled policy of the Pierce-Arrow company in the general design of its cars was settled 3 years ago, at which time a line of three different six-cylinder models were placed on the market and when it practically was decided to discontinue the manufacture of four-cylinder machines. Since that time a continuous refinement program has been carried on from year to year.

For 1912 the refinement work is continued, and the continuity of policy is adhered to in that the three models, namely six-36, six-48 and six-66 are continued. Only six-cylinder models are listed and in practically every respect they are the same as this year, excepting as herewith stated.

The cylinder sizes in the 36 and 48-horsepower models have not been altered and are: Six-36, bore 4 inches, stroke 5⅛ inches; six-48, bore 4.5 inches, stroke 5.5 inches; but in the six-66 sizes have been changed and the bore is 5 inches and the stroke 7 inches. This is a most important change. At present the size is: bore 5.25 inches and stroke 5.5 inches. The stroke has been jumped into the long-stroke category, the ratio being 1.40 to 1. In a word, the stroke is two-fifths longer than the bore. The long-stroke motor has been receiving much attention abroad for the last year or so, but chiefly among the lower-powered cars, but Pierce has brought its largest model into this classification. It scarcely would be right to call the six-36 and the six-48 long-stroke models because the respective stroke-bore ratios are 1.28 to 1 and 1.24 to 1.

Change of Cylinder Size

The change of cylinder size in the six-66, namely, reducing the bore, is not common in the American field, but it is indicative of the additional power that can be derived from lengthening the stroke; and in this connection the company continues the 66-horsepower rating, although according to S. A. E. formulae it would be but 60. The long stroke makes the difference. Not a few other companies which have lengthened the stroke for next year are rating their motors in advance of the S. A. E. figures. The piston displacement for the three motors respectively is as follows: Six-36, 347 cubic inches; six-48, 545 cubic inches; and six-66, 825 cubic inches.

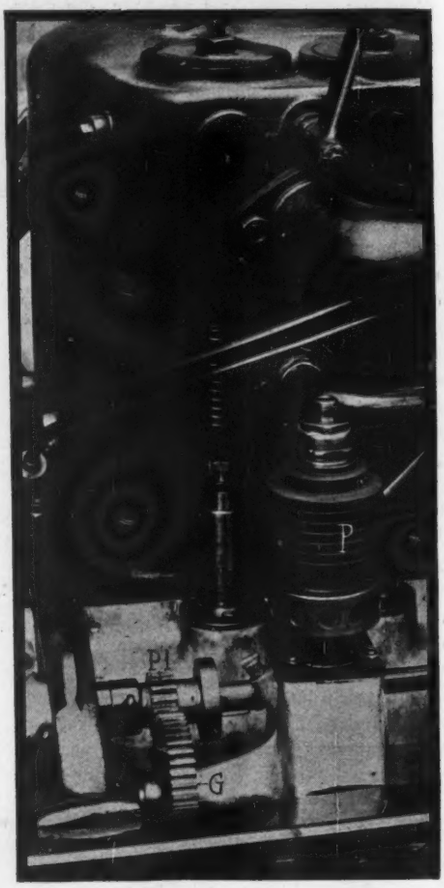


FIG. 3—POWER TIRE PUMP AND ITS DRIVING GEARS

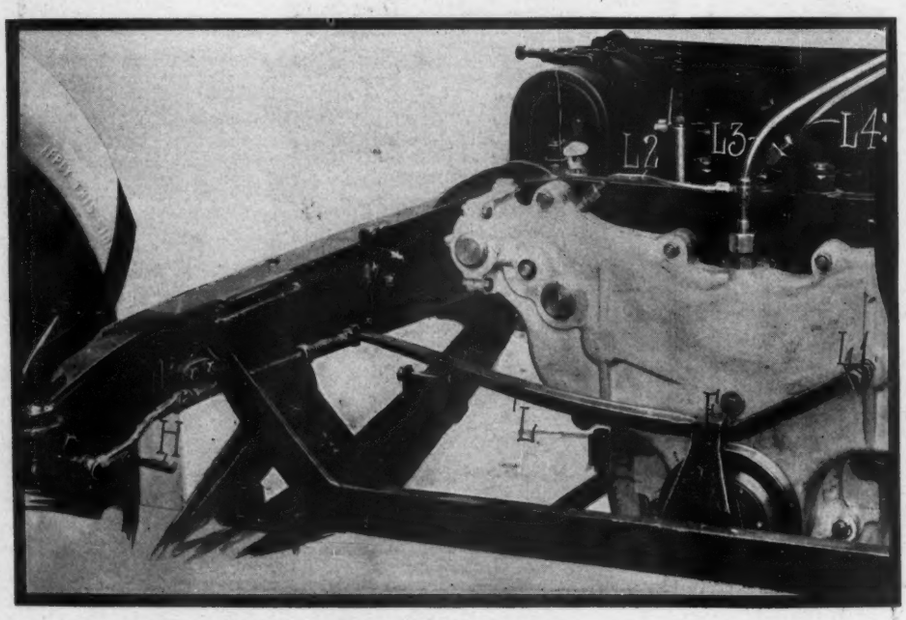


FIG. 2—FRONT END OF MOTOR SHOWING OIL LEADS TO TIMING GEARS

Body Lines Are Different

Passing to the changes that have been made in the Pierce line, it is in connection with the bodies that these are most apparent. The body lines are entirely different from previous models, due to the modern trend for fore-door or flush-sided bodies. All the models are of this type whether closed or open designs. Fig. 8 on another page shows the standard 6-48 touring car for seven passengers. The heavily hooded dash of previous years is continued, although slightly altered in contour to conform with the body lines. The same holds true with regard to the three-

FIG. 4—EXTENSION PLATES ON FRAME

passenger roadster body on the six-36 and six-48 chassis. On these the top of the dash has more of an up curve. Both of these runabouts have folding rumble seats. Because of locating the change speed and emergency brake lever inside of the body, the body at this point has been made wider. Previous to this season the body was of the frame width, but now it has been extended over the frame line, and in order to do this extension plates P, Fig. 4, have been introduced, the body resting on one of these plates at each side, the result being a sufficiently stable support for the extra body width.

In the enclosed types of bodies the suburban, the brougham and the landaulet all show similarity in design, and all are characterized by the arched top to the rear compartment door. This arch gives a higher entrance which eliminates the danger of striking the hat when entering the car. The six-66 vestibule suburban has two doors of full height for entrance to the front seat, whereas the suburban on the six-48 chassis has half height doors of similar design to those on the open touring car. Landau bodies are made for five and seven passengers, and have the same type of hooded dash as used on the touring car.

Roomier Bodies Furnished

In general the bodies are roomier than those of this year. The sides are almost vertical and everyone of the twenty-one body types gives more available inside space, part of which is for the benefit of the passengers and part for deeper upholstery. The running boards are entirely clear of incumbrances, except for the tire irons. The battery has been slung under the body, and the tools are placed in a compartment built into the apron that extends from the body to the running boards. Heretofore the tools were carried in a compartment under the front seat and by transporting them to their new compartment it has been possible to increase the size of the gasoline tank located beneath the seat. As heretofore the bodies are all made of cast aluminum, the castings for which are filed down to a smooth surface and riveted into place on the wood frame.

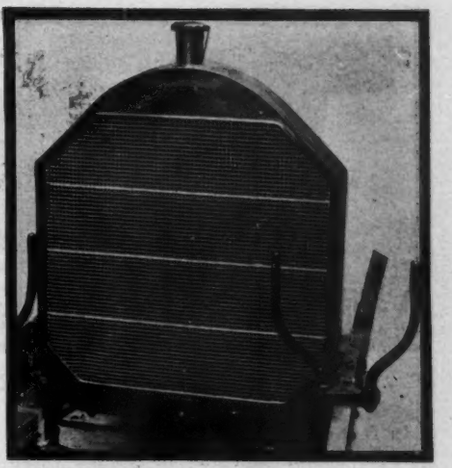


FIG. 5—NEW DESIGN OF RADIATOR

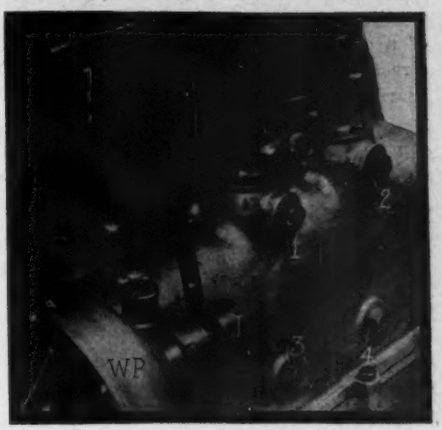


FIG. 6—BOSSES ON PIERCE MOTOR FOR MOUNTING LIGHTING DYNAMO

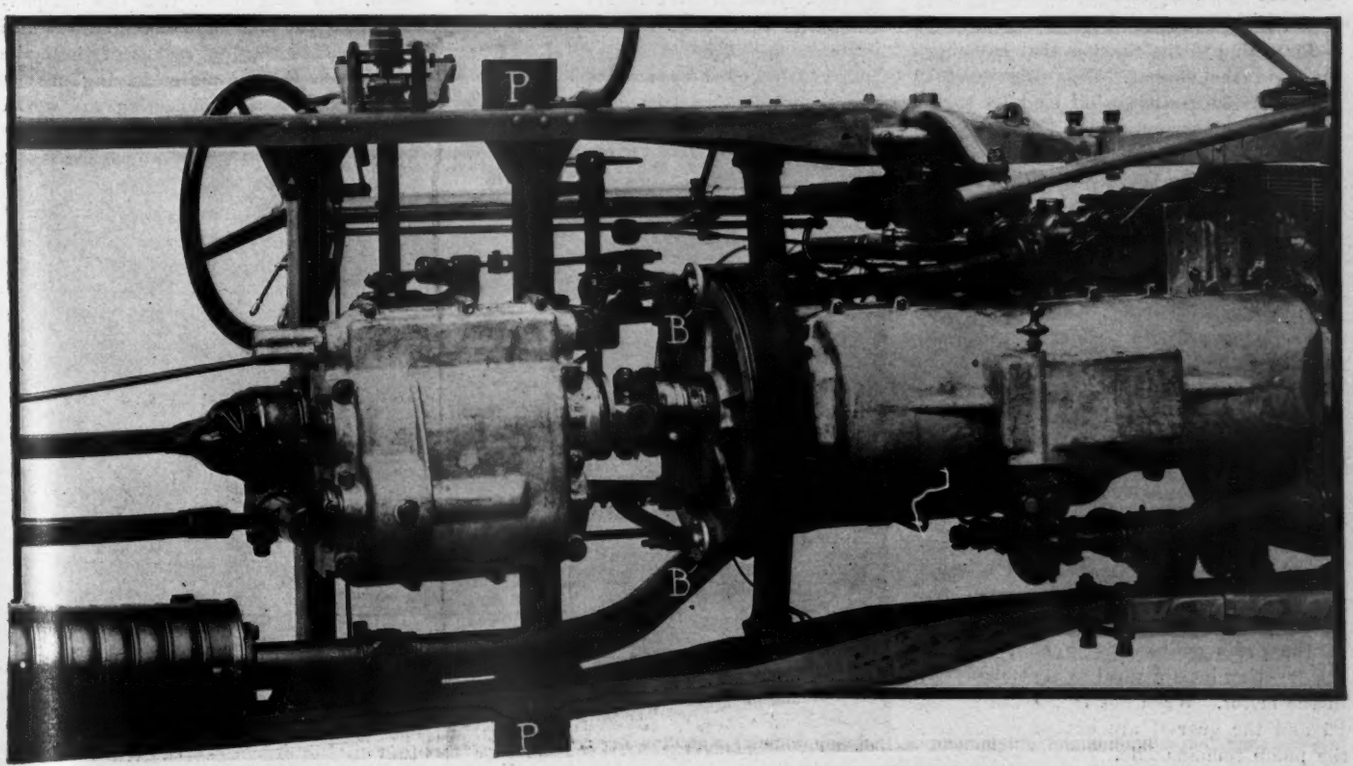


FIG. 7—BOTTOM VIEW OF PIERCE CHASSIS ILLUSTRATING ARRANGEMENT OF CLUTCH BRAKE B

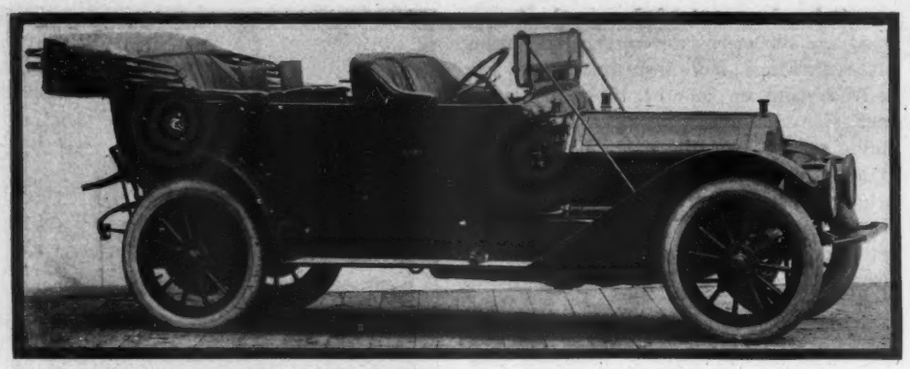


FIG. 8—SEVEN-PASSENGER FORE-DOOR TOURING CAR

In fore-door bodies ventilation is an important factor and in the Pierce-Arrow line it has been installed in the base-board of the glass front. Fig. 1 illustrates the ventilator employed which takes the form of a cowl C curving downwards so as to direct the air current upon the footboards. Fig. 9 shows a front view of the ventilator with the hinged doors which can be opened to any extent according to the requirements for ventilation of the car.

New Form of Folding Seat

In the seven-passenger cars a new form of folding seat has been introduced. It is made with arm rests and is so mounted in the car that the seat supports do not interfere with the feet of the passengers in the back seat. When the auxiliary seat is folded it swings back into a locked position at the side of the car and is scarcely visible from the outside. In folding, one motion brings the back and the arm rests flat upon the seat; a second motion pushes the seat flush against the side of the car; and the third movement swings it back into position.

Returning to the changes that have been made in the chassis. One illustrated in Fig. 2 is the use of an oil lead L4 to the front motor bearing, a lead L3 to the center of the timing gear housing and a branch L2 to the bearing for the magneto shaft. This last branch is a new one for 1912, and is in keeping with the policy among several other makers of delivering oil direct to as many of the important motor bearings as possible.

An important detail which is continued for the second season is the power pump P, Fig. 3, which can be considered an integral portion of the motor. This pump is driven by the pinion P1 carried on a sliding hub on the pumpshaft, Fig. 10 showing its exact location. From this pinion the drive is transmitted to the gear G3 on the crankshaft of pump. The pump in its entirety is a Pierce product. It is a single cylinder type, air-cooled. The piston carries metal compression rings; the interior of the pump cylinder is ground, and the construction is as careful as that employed in the motor. When not in use the pinion P1 and the gear G are out of mesh, and the pump remains idle.

On all models provision has been made for mounting on the motor an electric generator to furnish current for an electric lighting system if desired by the owner. This is provided by the use of four bosses, 1, 2, 3, 4, Fig. 6, on the rear of the crankcase on the left. These are for attaching

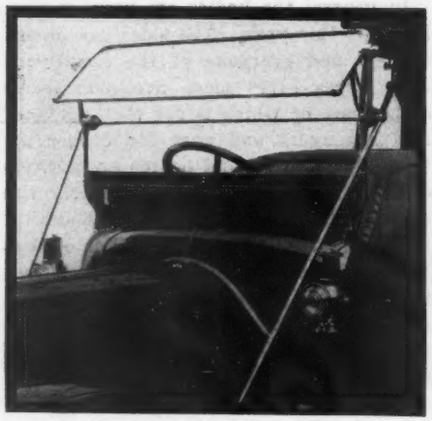


FIG. 9—DASH VENTILATOR OF PIERCE

the bracket on which the generator may be carried. The bracket is not provided as standard equipment. Provision also is made to drive the generator through the continuation of the pump shaft which carries a jaw coupling J on its rear end. The Pierce lamp equipment includes two gasoline headlights with an attachment for lighting from the seat; and two dash and one rear lamp for oil or electric lighting.

The facilitating of changing gears in the gearbox has lead to the improvement in connection with the clutch which takes the form of two disk brakes B, Fig. 7, facing the rear of the flywheel. These disks are so positioned that when the cone of the clutch is moved backward for clutch disengagement it bears against the face of these disks, and thus its spinning is at once reduced, thereby enabling gear change without breaking of the gears. As formerly a cone clutch is used on all three models. A ball-thrust collar is introduced for the clutch shifting collar.

Pierce-Arrow Oiling System

The oiling system of all Pierce-Arrow models is the same, and to all intents and purposes is the same in principle as that used on the first Pierce models in 1901, this season marking a period of 10 years for its use. It is best described as a combination circulation gravity system. A gear pump shown in the illustration of the motor elevates the oil from a reservoir in the crankcase base to the large tank carried on the cylinder heads on the exhaust side. From this tank separate oil pipes lead to each of the seven crankshaft bearings as well as to the timing gear housing. Once at the bearing, the oil is led through the drilled crankshaft to the lower bearings of the connecting rod. It issues from these bearings in the form of a mist which settles on the cylinder walls.

With the Pierce-Arrow company the trouble seems to be getting just enough oil into the cylinder walls and not too much. To accomplish this the company continues the use of baffle plates which are placed in the lower ends of the cylinders, each baffle plate having a slot through which the connecting rod works.

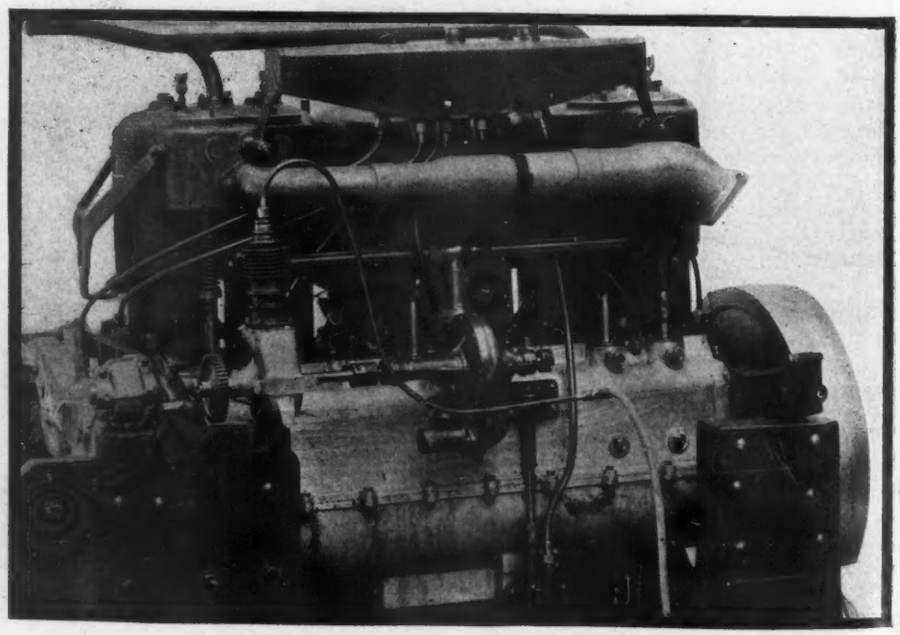


FIG. 10—LEFT SIDE OF PIERCE MOTOR

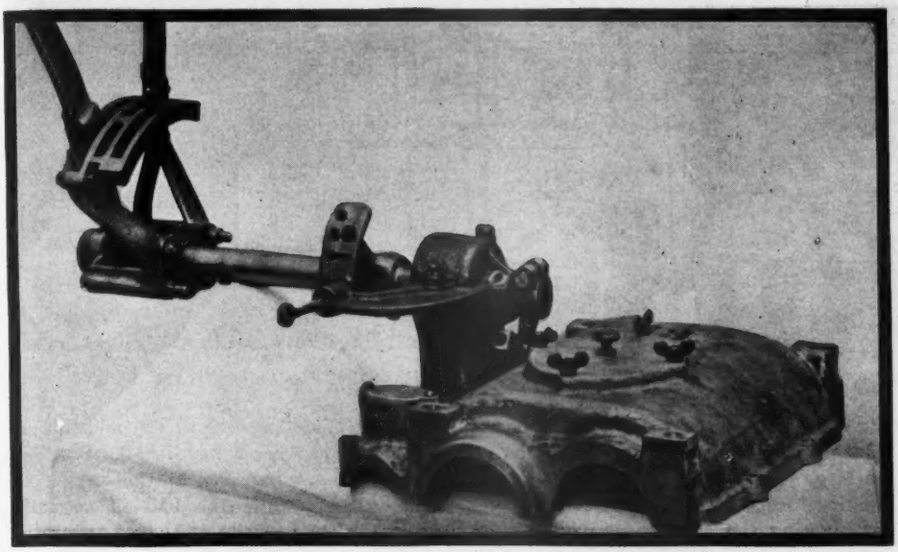


FIG. 11—GEARSHIFTING MECHANISM OF PIERCE-ARROW

Enough mist of oil enters through this slot to lubricate the cylinder walls and piston rings. In the crankcase the usual splash level into which the connecting rods dip is not present. It is a non-splash system. The oil which condenses from the mist settles into the base of the crankcase and immediately flows to the pump reservoir, when it is strained through fine wire mesh screens and made ready for re-circulation. On the dash is a gauge which shows the level of the oil in the gravity tank. The bottom of the tank as well as the crankcase is sloped to an extent sufficient to guarantee a constant supply to the tank oil leads and also to the pump in the crankcase no matter how steep the grade on which the car may be traveling.

Ignition and Carburetion

The ignition and carburetion details have not been altered. Two separate and entirely independent ignition outfits are provided. One of these is a Bosch high-tension magneto, and the other is a battery equipment with a commutator working in conjunction with a six-unit coil with master vibrator. The carburetor is a Pierce construction as used for several seasons. It is of the separate float chamber type with the spray nozzle located in the venturi passage. A spring-controlled auxiliary air valve is used. The mixing chamber is waterjacketed. Access to the carbureter is provided by a door in the mud apron.

Two features are used on the Pierce motor to facilitate starting. One of these is a priming pump on the dash operated by hand. A stroke or two of this pump is sufficient to inject enough gasoline into the intake manifold to furnish a desired mixture. The point where the gasoline enters the manifold is arranged so as to spray the fuel. On the six-66 a compression relief illustrated in Fig. 2 is used. This holds the exhaust valves open for a period, thereby enabling the driver to crank the motor with comparative ease. This compression relief is operated by the small handle H located in front of the radiator on the left side of the frame. The movement of this handle is transmitted to the exhaust camshaft through the transverse lever L which is fulcrummed on the bracket F. The short end of the lever connects directly with the camshaft at the point L1.

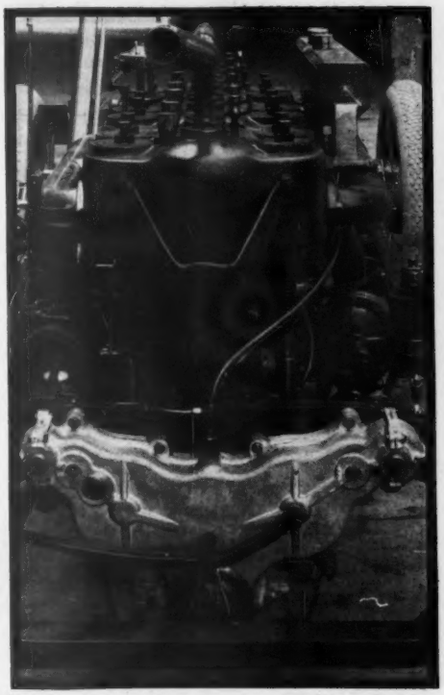


FIG. 12—FRONT END OF MOTOR

The cooling details remain practically as heretofore. Fig. 5 shows, however, the higher design of cellular radiator which will be used for the coming season. It is of the same general design as heretofore, and is carried on a dropped channel section cross piece of the same.

Pierce Structural Details

In structural details the Pierce-Arrow motor has not been altered. The use of cylinders cast in pairs with opposite valves is continued. In spite of the fact that the cylinders are cast in pairs, the company uses a seven-bearing crankshaft, whereas the majority of concerns building six-cylinder motors with twin castings employ but four bearing crankshafts. It is becoming common practice with many of the leading European makers to insert a crankshaft bearing between all adjacent cylinders irrespective of whether the cylinders are cast separately, in pairs, or in one block.

The crankcase is a two-part aluminum casting, divided horizontally in the plane of the crankshaft bearings with the bearings supported in the upper half. The supporting of the motor on forged cross pieces extending from side to side of the main frame is continued, this company being a pioneer in this form of motor support. The exhaust manifold has been designed to act as an aid in developing power. It is formed of three pipes with sliding joints, each one larger than the one provided for the pair of cylinders forward of it. Owing to the increase in the size of the manifold at each joint a pocket is formed which produces a partial vacuum, the effect being that the exhaust gases are actually sucked out of the engine instead of being compelled to force a passage through the manifold. Laboratory tests show an

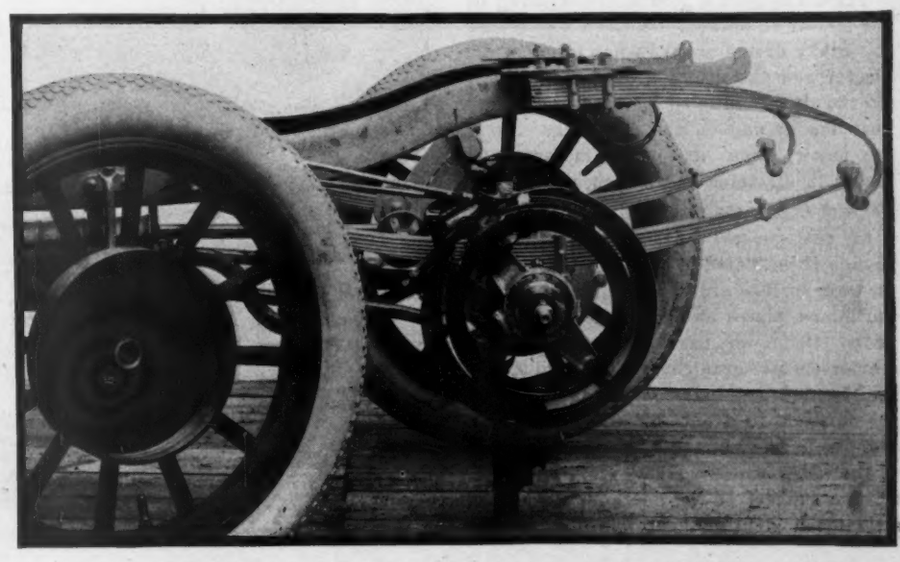


FIG. 13—REAR END AND BRAKE CONSTRUCTION OF PIERCE-ARROW CHASSIS

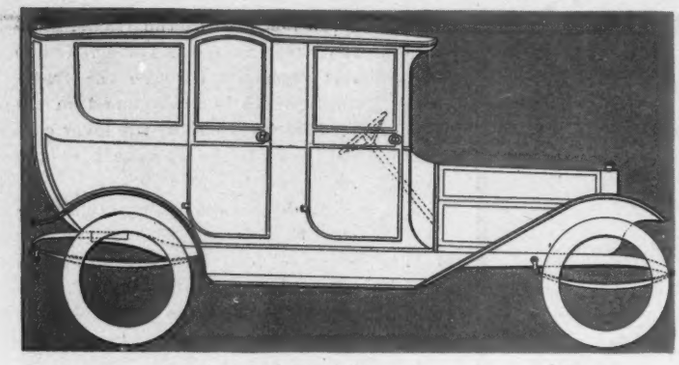


FIG. 14—PIERCE VESTIBULE SUBURBAN BODY

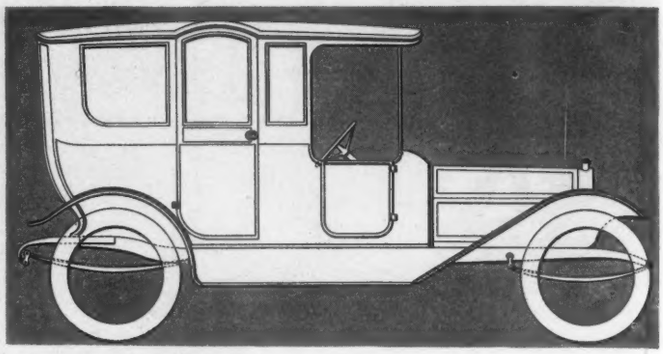


FIG. 15—FIVE-PASSENGER BROUGHAM BODY

increase of power because of this design.

In the transmission details of the Pierce-Arrow line attention already has been directed to the clutch improvements. An improvement has also been made in the gearset of all models. This does not appear in the illustration, but is one of the many examples of car refinement from year to year which results in an improvement. The main shaft of the set is made with six flutes or integral keys. This year the shaft has but four. The use of six gives a shaft that is less liable to give in operation, in other words it has greater rigidity and insures a better mesh of the gears when in operation. This should give a quieter gearset.

Transmitting the Power

The transmission of power from the gearset to the rear axle is through a propeller shaft with two universal joints. A torsion bar mounted rigidly with the rear axle housing and supported between springs at its forward end parallels the propeller shaft. The Pierce axle has not been a floating type, but on the six-66 model for next year it will be possible to withdraw the axle drive shafts without taking the axle housing apart. This can be done after taking the hub off, and unscrewing the caps containing the Timken roller bearings on the ends of the axle case. In the six-36 and six-48 models the axle details of the present year are continued.

There has been a general overhauling in the matter of brakes. On the six-66 model the brake drums are 2 inches large in diameter and the drums are ¼ inch wider. On the six-48 the same increase in size has been made; and on the six-36 the drums are much larger and now measure 14 inches in diameter and 3 inches in width.

General Chasis Construction

In the general chasis construction a change to be noted is that the three-quarter rear springs are now mounted beneath the gusset plates on the frame instead of above them as used at present. The frames on all three chassis are cold-rolled heat-treated members. The side members are inswept in front of the dash and dropped in front of the rear axle. Midway of the axles are two frame cross members for the support of the gearbox. Fig. 4 illustrates a stearing gear improvement in the form of a brace M extending from the side member of the frame to a collar on the steering column. In addition to adding rigidity to the column it forms a support for pivoting the accellerator pedal A on.

The tire sizes on Pierce models have shown a general increase from year to year for the past three seasons. For 1912 the sizes are: Six-36, 36 by 4½ on all models; six-48, 36 by 4½ all around the runabouts, and 37 by 5 on the rear for all other models. On the six-66 the runabouts carry 37 by 5 sizes and on all others the rear tires are 38 by 5½.

COUNTS BRAKE OPERATIONS

More damage being done to tire by rough usage of the brakes than by normal running, and owners being frequently unable to personally supervise the work of their drivers, a French inventor has produced a machine which will automatically register every occasion on which the car is brought to a sudden stop. The apparatus consists of a simple type of automatic counter—such as is used on printing presses, or by postal authorities for counting mail bags—with the addition of a tube containing a metal ball. One end of the tube terminates at the trigger of the counter, while the ball is normally lodged in the opposite end. The apparatus is mounted horizontally to some portion of the bodywork of the car, with the ball towards the rear. A sudden stoppage of the car by reason of a quick application of the brakes will cause the ball to be shot forward to the opposite end of the tube, where it strikes the trigger of the counter and causes a number to be recorded. The tube is sufficiently inclined rearwards to allow the ball to run back to its original position under its own weight. The inclination also is sufficient to prevent the ball running forward under its own weight merely by the inclination of the car when on a down grade. An improved method of fitting is to pivot the instrument so that it will always remain horizontal whatever the inclination of the car, thus only a jerk, caused by a sudden application of the brakes can shoot the ball forward and record a number.

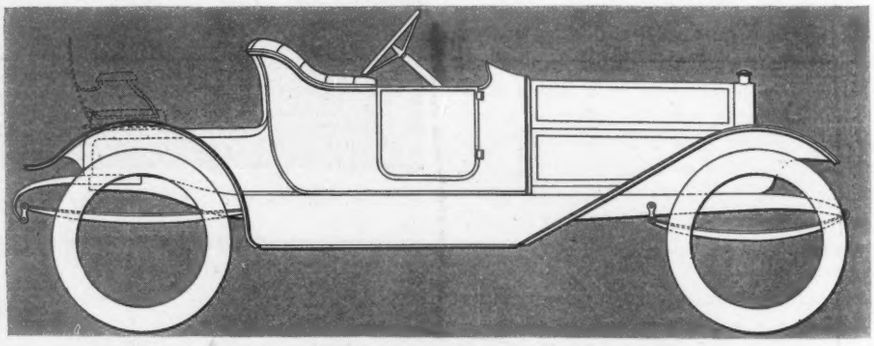


FIG. 16—THREE-PASSENGER RUNABOUT

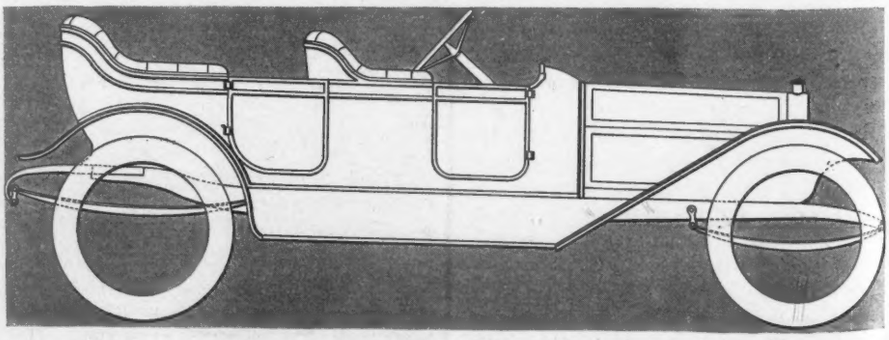


FIG. 17—FOUR-PASSENGER TOURING CAR

Development Briefs

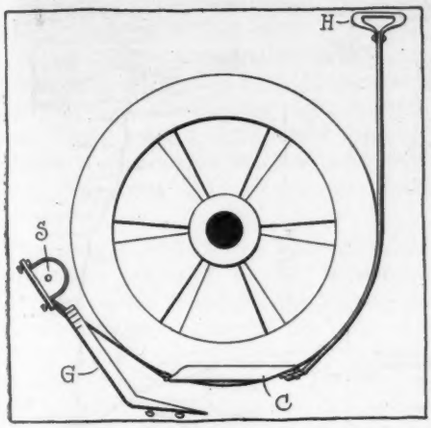


FIG. 1—KIMBALL MOTOR STARTER

Novel Motor Starter

THE Kimball Tire Case Co., Council Bluffs, Ia., has brought out a motor starter which operates on the flywheel. Fig 1 illustrates it. The main feature is a clamp C which grips the rim of the flywheel when you pull upwards on the handle H attached to the strap which carries the clamp. When the flywheel starts the clamp loosens and is pulled backwards by means of a spring S into a guard G which holds it in place until needed again.

Weiland Supplementary Carbureter

Among the many devices on the market for improving carburetion, one of the most interesting is the Weiland supplementary carbureter, made by the American Die and Tool Co., of Reading, Pa. This is intended for attachment to any float-feed carbureter as a permanent fixture and to give a perfectly homogenous mixture at all engine speeds, at the same time having the advantage of not interfering with the free flow of vapor along the intake passages. The device with its attachment at the lower end to the drain cock in the bottom of the carbureter and at its upper end to the intake pipe above the carbureter is illustrated in Fig. 4. It is attached to the side of the float chamber in such a way that the level of the gasoline in the float chamber is visible in a gauge glass.

Advantage is taken of the suction between the throttle and the inlet valve when the motor is running on a partly open throttle. The air enters through the oval opening just above the gauge glass and passes in the direction of the arrows down through the gasoline in an inner tube, out through the round holes at the bottom and up through the gasoline between the gauge glass and the inner tube. The carburetted air then passes out through the horizontal U tube into the intake pipe. There is gasoline in the gauge glass only in starting, as when the engine is running all the gasoline is taken from the gauge glass. This gives a very rich mixture for starting purposes. No suction is created on the gasoline in the float chamber, as all the air openings for admitting air to the supplementary carbureter are very large.

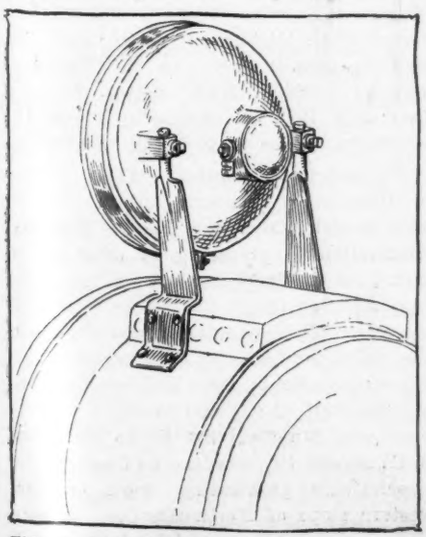


FIG. 2—ELECTROBOLA PORTABLE LAMP ON HEADLIGHT

Electrobola Auxiliary Lamp

The Avery Portable Lighting Co., Milwaukee, Wis., has brought out during the last 2 months what it designates its new Electrobola auxiliary lamp, which is designed to be attached to the top of the ordinary gas or acetylene headlight. Fig. 2 shows its attachment on a head light. Each is fitted with a 16-candle power Mazda bulb. It is claimed these will illuminate a roadway 700 feet in front of a car. The necessary current is supplied by 120 amperehour storage battery or two 60 amperehour storage batteries connected. The entire headlight and reflector is formed in one casting manufactured from an alloy of magnesia and aluminum. The inside is turned, ground and polished; the parabola is claimed to be a perfect projector of light and the reflecting surface nontarnishable. By this means of manufacture it is possible to make a substantial lamp weighing but 6½ pounds.

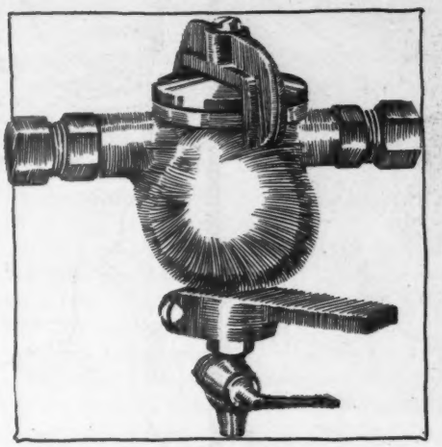


FIG. 3—RAYFIELD STRAINER TRAP

Rayfield Strainer Trap

The Findeisen & Kropf Mfg. Co., Chicago, has brought out a combination strainer and trap for insertion in the gasoline line and intended to arrest any water or other impurities that would otherwise reach the carbureter, with consequent damage to the running of the motor. The trap is illustrated in Fig. 3. The gasoline enters at one end, flows directly to the bottom of the trap, and in rising to pass out passes through a fine metal screen so that all impurities are left at the bottom and can be drained off through the cock. The entire top of the trap is removable for cleaning.

Removes Carbon Deposits

Carbon-Nit is the name of a carbon-removing preparation which is intended to be fed to the cylinders through the carbureter. It is manufactured by the Carbon-Nit Co. of Clinton, Ia. The directions for use say that in ordinary service the best way to apply the preparation is to pour one-half pint of it slowly into the air passages of the carbureter while the engine is running slowly. In bad cases, where the engine shows extreme loss of power and excessive gasoline consumption, put one-eighth pint of the preparation into each cylinder, let it stand over night and feed more through the carbureter in the morning. It is said that it will usually be necessary to reduce the consumption of gasoline 25 per cent to make the motor run properly after the use of carbon-nit. It can be mixed with the oil without harmful results.

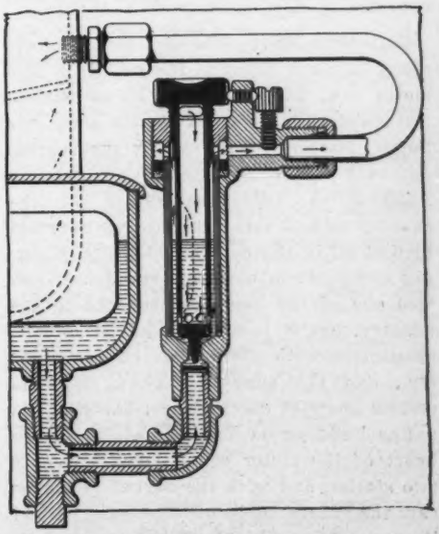
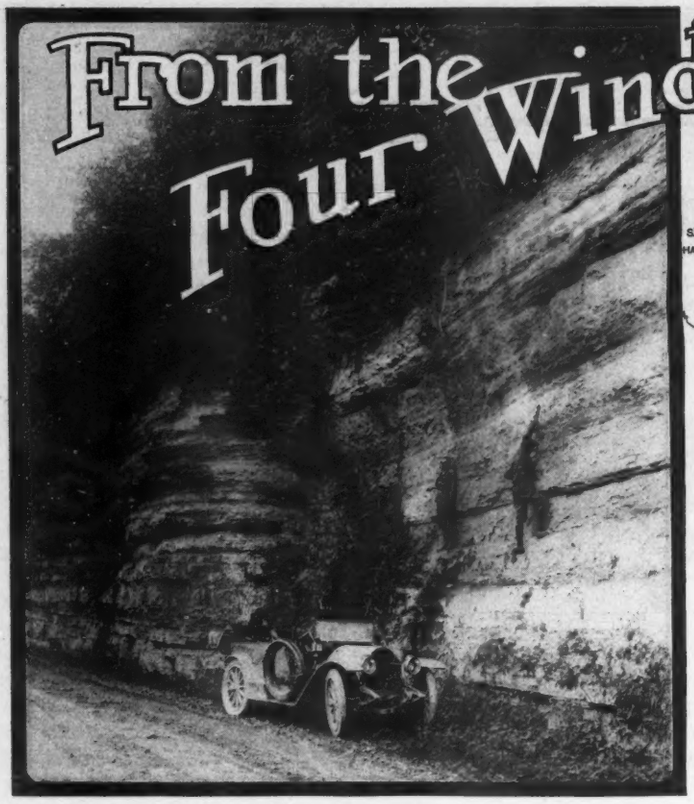


FIG. 4—WEILAND SUPPLEMENTARY CARBURETER



BETWEEN HARRODSBURG AND LEXINGTON, ON CHICAGO RELIABILITY ROUTE—MAP OF CHICAGO TOUR

Hartford Meet Postponed—The track meet scheduled at Hartford, Conn., last Saturday, was postponed because of a heavy fall of rain.

Abolishing Made Crossings—Indianapolis, within the next few weeks will begin the abolition of all railroad crossings at grade in the central part of the city. It is the intention to let contracts for the entire work at one time and it is believed that within 3 years all grade crossings in the center of the city will be eliminated, leaving grade crossings only on the out skirts. The work, it is estimated, will cost approximately $6,000,000 and the work is expected to start by January 1, 1912.

Club Must Move—The march of progress along Boylston street in Boston, the Hub's motor row, has forced the Massachusetts Automobile Club officials to look about for larger quarters. This club is the nearest approach to the Automobile Club of America of any organization in the country and of late years it has not dabbled at all in affairs connected with motoring except from a garage standpoint. It was one of the first organizations in the country, but it is never heard of now in connection with sports, legislation, roads, etc., and the general run of motorists seldom know of its existence. The club has a fine building on Boylston street in the heart of the motor colony, but it is only two stories, and with the advent of bigger cars the garage space became cramped and it was not possible to take in so many machines. Some of the Boston dealers have their eye on the club house for salesrooms and garage purposes and it will be grabbed quickly once the club decides to vacate.

Milwaukee Entertains Orphans—The Milwaukee Automobile Club entertained 560 orphans, the largest number since it inaugurated an annual orphans' outing day, on September 7, more than 100 touring cars being donated by members to carry the little unfortunates from the asylums to Washington park, where a lunch was served on the grass. Frederick Gettelman was chairman of the outing committee and W. H. Pipkorn, through whose efforts the outings were first arranged and continued, acted as chief marshal. The supplies were transported in three trucks, a Stegeman, a White and a Pierce-Arrow. Mrs. Gustav G. Pabst, wife of the president of the Pabst Brewing Co., donated all ice cream and cakes, as has been her custom in past years.

Elgin Receipts.—An official report on the attendance and receipts of the recent national stock chassis road races at Elgin has been made by Philip Freiler, treasurer of the Elgin Automobile Road Race Association. According to Mr. Freiler the association collected 14,007 general admission tickets the first day and 28,002 the second, while the parking space returns show 1,354 cars the first day and 2,480 the second day. The association distributed $10,200 among the seventy-five farmers who owned property around the course for their share of the receipts and on the guarantee that was made them. In addition to this the farmers received $4,500 for work which they did on the road. An interesting item was the sum of $10,500 which was spent by the Elgin association for widening, oiling and repairing the racing circuit.

Encircles Lake Michigan—Henry J. Adams, his wife, sister and two children, 2 and 4 years old of Fostoria, Ohio, a week ago Wednesday completed a trip of 1,700 miles around Lake Michigan, this being the first time that this great lake had ever been encircled by a motor car. The trip was undertaken in order that Mr. Adams might gratify his ambition to bound Lake Michigan by motor car. He and his family went to the Reo factory at Lansing, Mich., where they got their new 1912 car. Following the northern route, Adams succeeded in his attempt.

Another Coast Project—"First to City of Mexico" is to be the title of a solid gold medal which the Pacific Highway Association is preparing to offer as an award for the first car which will make the run from San Diego, Cal. to the capital of the much-troubled southern republic, under the rules provided by the organization. The announcement, made last week following the start of a Flanders 20 on a thousand mile run from Seattle to Hazelton, B. C., reveals the breadth and scope of the association's pathfinding work on the western slope of North America. It discloses an ambition to establish a definite route from Alaska to the Isthmus of

Panama, with good roads campaigns to follow that are expected in time to perfect a safe-going trail over which motorists may journey the entire length of North America from north to south.

Wants Club in Indianapolis—C. L. Diers, manager of the Indianapolis Goodyear tire branch is selling stock in a proposed social motor car club. The stock is selling at $10 a share and thus far about 100 shares have been subscribed. At this time Indianapolis has no motor car club for social purposes, although it has a very progressive and active motor car trade association.

Milwaukee After Noises.—An ordinance has been introduced in the Milwaukee common council forbidding the practice of cutting out the muffler within the city limits, as well as doing away with other so-called unnecessary noises. The penalty for violation is a fine of $25. It is proposed to amend the proposed ordinance to prevent motor cars from smoking and the use of radical signals.

Nebraska Route Marked.—The North Platte route through Merrick county, Nebraska, was plainly marked last week through Merrick county by Dr. H. E. Glatfelter, J. A. Hays, John Desch, and Will Vieregg, all of whom have been enthusiastic good road workers. The insignia of this route is a white band on poles, inclosed at top and bottom with black and yellow bars. The poles were marked at every turn.

Flanders Declared Stock—All doubt as to the Flanders 20, which recently won the St. Louis—Kansas City reliability run from a classy field, being a stock car, has been removed. George E. Lane, Detroit representative of the American Automobile Association, made a thorough inspection of the car last week, after personally breaking the seals of the freight car in which the machine had been shipped back to Detroit, and wired Chairman Butler of the contest board, that the car was stock in every particular.

Will Mark Desert Course—The Los Angeles-Phoenix racecourse will be marked. Drivers in this strenuous desert event have Teddy Tetzlaff to thank for this fact. After covering the course last week and twice tempting death, once in the hot sands of Mexico and again in the mountains of Arizona, Tetzlaff told Purdy Bullard a few things about the race course that even the father of the race did not know. Tetzlaff insisted that the marked road not only would assure the success of the event, but would save the contestants considerable time, money and possibly a life or two. Bullard was quick to realize the logic of Tetzlaff's argument and agreed for the Maricopa Automobile Club, of which he is president, to put $100 toward the posting of the road from the Colorado river east to the fair grounds at Phoenix, providing the Automobile Club of Southern California will mark the course as far as the Colorado river on the west. The officials of the A. C. willingly agreed to their part of the marking.

Ministers Use Cars—A dozen cars filled with preachers recently toured Hancock county, Ohio, holding religious services in every town and village. The idea was conceived by Dr. Birch an evangelist who is conducting services at McComb. A great farmer's meeting was held at McComb on September 2, and the work was preparatory for that occasion.

Harold Parker's Plans—Chairman Harold Parker of the Massachusetts highway commission, who sent his resignation to Governor Eugene N. Foss to take effect November 1 is to continue his life work that of building roads, but in the employ of a private corporation. He is now a director and vice-president of the Hassam Paving Co., of Worcester, a concern engaged in building roads in many cities throughout the United States and Canada.

A Cadillac Feat—To a Cadillac goes the envied distinction of reaching the highest point on Mount Tacoma ever attained by a motor car, Camp of the Clouds, an elevation of 5,557 feet above sea level. This is fully a mile farther up the mountainside than ever before traversed by a motor car. Carrying Edward S. Hall, superintendent of Tacoma national park, Edward Allen Lynn H. Miller and Smith H. Miller, with the latter driving, the Cadillac started from Longmire Springs at 7 P. M. and completed the run of 15 miles in the remarkably fast time of 1 hour 30 minutes. After spending the night at Reese's Camp the party returned to Longmire Springs early in the morning, making the run down in 1 hour 20 minutes. The journey was in reality a scouting trip planned by Mr. Hall to ascertain if it was advisable for the Rotary Club, to make the run up the mountain in their cars.

Taft Billed to See Races—Motorists of Syracuse and central and northern New York are expecting the most pretentious race card ever offered in Syracuse, N. Y. which will take place next Saturday, 16 the closing day of the New York state fair, upon one of the fastest mile circular courses in the country and with President Taft as the guest of honor. Vice-President Sherman will probably be there, too.

A Knotty Legal Point—"If a man marries a woman who owns a motor car, does he become a chauffeur, and must he take out a license to drive it" is the substance of a letter recently received from a worried newlywed by State Motor Car Registrar Shearer, of Ohio. The letter explained the recent marriage, admits that the husband now owns a half interest in the car, and requested an immediate answer as "the weather is nice, but we are waiting and not taking any risks." The woman's mind was relieved by Mr. Shearer who answered no.

Will Visit Victoria.—Victoria, B. C., will be the destination of the motorists who participate in the third annual run of the Automobile Club of Seattle, which was started on Wednesday, September 13. The machines will be shipped by boat from Seattle to Victoria, from which city tours of Vancouver island will be made. Provision will be made by the club so that no bond will be required of the visiting motorists by the custom authorities. The roads on Vancouver island have been marked and afford comfortable touring in addition to the scenic advantages.

Coming Motor Events

September 15—Track meet, Appalachian exposition, Knoxville, Tenn.

*September 16—Track meet, Automobile Club and Dealers, Syracuse, N. Y

September 18-20—Reliability run for trucks of Chicago Motor Club, Chicago.

September 19-21-23—Reliability run, Burlington, Vt.

September 23—Track meet, Point Breeze. Philadelphia Automobile Trade Association.

*September 23-25—Track meet, Detroit. Michigan State Automobile Association.

October 3-7—Track meet, Danbury, Conn. Agricultural Society.

October 7—Track meet, Springfield, Ill. Springfield Automobile Club.

*October 7—Fairmount Park road race, Philadelphia.

October 9—Oklahoma reliability run, Daily Oklahoman.

October 6-13—Eight-day reliability run of Chicago Motor Club.

October 9-14—Five-day reliability run, Denver Motor Club.

*October 14—Santa Monica road race, Los Angeles, Cal.

October 15-25—Glidden tour, New York to Jacksonville.

October 16-18—Reliability run of Harrisburg Motor Club.

November 1—Track meet of Waco Automobile Club, Waco, Tex.

November 2-3-4—Reliability run of Quaker City Motor Club, Philadelphia.

November 9-11—Track meet, San Antonio Automobile Club.

November 4-6—Phoenix road race, Maricopa Automobile Club.

November 9—Track meet of Maricopa Automobile Club, Phoenix, Ariz.

November 27—Vanderbilt road race, Savannah, Ga.

November 30—Grand prix race, Savannah, Ga.

January 1-5—Annual show, Automobile Manufacturers' Association of America, Grand Central palace, New York.

January 6-13—Twelfth annual show, pleasure car division, Automobile Board of Trade, Madison Square garden, New York.

January 6-20—Madison Square Garden show, New York City, Automobile Board of Trade.

January 10-17—Annual show, Motor and Accessories Manufacturers, Madison Square garden, New York.

January 10-17—Annual show, National Association of Automobile Manufacturers, Grand Central palace, New York.

January 15-20—Twelfth annual show, commercial division, Automobile Board of Trade, Madison Square garden, New York.

January 27-February 10—Eleventh annual show under the auspices of the National Association of Automobile Manufacturers, Coliseum, Chicago.

March 13-20—Show of Boston Commercial Motor Vehicle Dealers' Association, Mechanics' building, Boston.

*Sanction already issued

The Motor Car Repair Shop

HE who would drive his car with a flat tire may be considered either foolish or recklessly extravagant. The average motorist does not realize that to drive a car three or four blocks on a deflated tire costs from $10 to $50, according to the size of the casing. Exaggerated as this statement may seem it nevertheless is true. It is possible to rimcut and bruise a casing sufficiently by running on it only a few rods with the tube deflated so that a blowout will result within 50 miles after a new tube has been replaced and the tire again inflated. Thus one may get less than 150 miles service from a tire that was capable of enduring even more than 5,000 miles. A casing which has suffered a blowout because of having been abused as above mentioned, is not fit to be repaired or retreaded; it will not last long enough to pay for the repair.

Injustice to Tire Maker

The tire dealer generally suffers the most from this abuse on the part of the motorist. The motorist punctures a tire by driving over a board with nails in it that might have been avoided, or by picking up a nail or tack or piece of wire that was unavoidable. The tire will become deflated, but the car may go bumping along for a mile or so before it dawns upon the motorist that a tire is deflated; the bumping being attributed to the roughness of the road. Often a motorist will drive on a deflated tire until someone calls his attention to it. The motorist then may remove the tube, and finding it badly cut up will replace it with a new one and never dream that the casing might have been damaged; the fact of the matter is that the damage is internal for the most part, the fabric having been creased and bruised and perhaps cut, or the tread loosened from the fabric. At any rate the casing soon suffers a blowout; or blisters form as a result of the loosening of the rubber tread from the fabric; and the motorist in a spirit of genuine indignation drives up to the tire dealer's place of business and shows the tire expert how in but a few hundred miles the tire has started to go to pieces. The tire expert knows that the motorist is sincere in his belief that the tire really is at fault, and often he will give the motorist credit for the tire that he really does not deserve.

The motorist who gets the least out of the tire expert is the one who willfully drives his car on a deflated tire. The tire expert, or claim adjuster, generally is quite as expert in his judgment of human nature; and the motorist who recklessly damages his tire and then tries to make the tire maker pay for the damage, generally gets but little satisfaction from the claim adjuster; which is as it should be.

Hints For the Amateur

Notwithstanding that the tires are the most costly features of motor car upkeep they are at the same time most engelected. A few words, therefore, on the care of tires may be of value to the conscientious motorist. Proper inflation is very important. A certain air pressure is required for every size of tire. This may be learned from the dealer, and a pressure guage should be employed to test the tires in order that the required pressure may be maintained therein.

Air Bottles Advisable

In motor cars having means whereby the motor cannot be used for inflating the tires, it is quite advisable to carry an air bottle, which may be used only in case the hand-pump becomes disabled or to bring the tire up to the required pressure after one has tired himself pumping. By running a car on under-inflated tires detrimental friction takes place between the strands of the fabric, and often causes the loosening of the rubber tread from the fabric, giving rise to the so-called sand blisters. The sandy substance found inside of these blisters when they are opened is nothing more than crumpled or granulated rubber frictioning material and cement used in making the tread stick to the fabric.

Oils and grease are very injurious to tires; it softens the rubber to a spongy consistency that greatly reduces its strength. Wheels that are badly out of alignment cause excessive tire wear, especially to the tread. Dented rims are very detrimental in that they promote rim-cutting that is injurious to the beads of the tire and cause blowouts. Should rims become bent or dented by running on a rim or hammering it, they should be trued up as soon as possible. Rusty rims also are bad for the tires, as the rust tends to rot the beads; rusty rims also make a simple tire change or repair a laborious operation. Should the rims become rusty, they should be thoroughly sand-papered until a bright surface is obtained, then painted with a pasty mixture of graphite and glycerine, or with any of the graphite paints obtainable from any of the painters' or engineers' supply houses.

The car should not be left with the tires standing in a puddle or oil or grease. If the oil or grease leaks out of the axle ends, new felt washers should be fitted, or too much grease or oil is being used, that is, the axle casings are being filled too full of the lubricant. Greasy tires should be washed with soapy water, forllowed by a wrenching of clear water, and not with kerosene or gasoline.

Water is not detrimental to the outside or rubber part of the casing, but it is very injurious to the fabric, causing it to decay and lose its strength. For this reason it is very important that the washer and retaining-nut over the valve stem always should be kept tight, so that water cannot get in; it also is necessary to keep the extra tires protected from light and moisture, particularly moisture. It is by no means common to see the extra tires of a car strapped into place without any covering whatever; when it rains water often gets into the casings and soaks into the fabric; then again water often gets inside of the casings when the car is being washed; often the casings will accumulate dust and dirt on the road, which later will be cleaned out by the chauffeur by directing a stream of water into them; all of this is very bad practice, the inside of the casing must be kept dry.

The inner tubes should not be carried loosely in the toolbox or in any of the compartments of the car. They should be kept either in a cardboard box and securely packed or in the rubber bags provided for the purpose. If the tubes are left loose among the jack, pump, tire chains and the box containing the tire-repair outfit, they very often are cut and damaged before ever they are brought into use. Even when they are tied into a bundle and packed into a corner of a compartment, unless they are packed very securely, holes are rubbed into them from constant rubbing contact with the side of the compartment.

Use of Tire Chains

As for the use of tire chains, their use is recommended only when the road surface is dangerously wet and slippery, and they should be removed as soon as road conditions will permit. Much has been said and written regarding the great saving in tire wear obtainable by careful use of the brakes; by taking corners slowly; by avoiding the car tracks, ruts and curbstones; and by driving the car at all times as gently as the required speed will permit. This, of course, is excellent advice and easily understood.

There is one other great cause of poor tire service, for which the motor car manufacturer has been to blame, that is overloading. Undersized tires are constantly subjected to greater strains than they are designed to bear, and consequently they will not give the service that they should. Owners whose cars are undershod may avoid much tire trouble, either by having their wheel rims changed so that larger tire may be used, or they may find considerable relief by using the special sized tires now marketed by various makers.

Manufacturers' Communications

STATEMENT FROM BOSCH

CHICAGO—Editor Motor Age—We have just noticed the letter on page 28 of the August 21 issue signed by A. D. Carpenter, Sauk Center, Minn., and while we are much obliged to him for his kind words about us, in justice to the numerous readers, we must point out that his figures concerning the cost of a magneto are totally misleading. We supply in very large quantities to private purchasers a four-cylinder magneto ready for installation on the engine at a price very little in excess of one-third of his figure of $150. Further figures of 10 per cent interest per annum on cost of magneto, plus $25 for upkeep are amusing, as 25 cents for upkeep of our magnetos would be nearer the mark, provided the owner does not allow the magneto to be taken to pieces from time to time as a recreation. This is pretty well known by dealers and private parties alike.—A. H. D. Altree, branch manager Bosch Magneto Co.

PRAISES STOCK CAR RACING

Indianapolis, Ind.—Editor Motor Age—Nothing can supplant stock chassis races as an index to the progress made in the motor industry. The advances made in the last 12 months were plainly demonstrated in the stock chassis road races at Elgin.

For instance, the Elgin National stock chassis race, 600 cubic inches and under, an event of 305.03 miles was won last year in 4 hours, 52 minutes 29.85 seconds, an average of 62.5 miles per hour. This year Zengel, in a current stock chassis National 40 won the same race in 275 minutes and 39 seconds, an average of 66.4 miles per hour, and 3.92 miles per hour faster than the winner of this same race 1 year ago. This means many refinements and new ideas incorporated in the car since the previous race. This is further demonstrated by the fact that Zengel made no stops for tires, even though he went at terrific high speed.

In the Illinois trophy race, stock chassis, 301 to 450 cubic inches, Herr and Merz, both in stock National 40's, eclipsed the record made by Livingstone in a car of the same manufacture in this same race 1 year ago. Livingstone piloted his winning National to first place without a stop during the entire 203.35 miles at 60.6 miles per hour.

This season Herr drove the same distance at an average pace of 65.66 miles per hour, 203.35 miles in 185 minutes and 55.18 seconds winning first place, while Merz finished second, but 9.65 seconds behind his team-mate. Both cars finished without a stop, giving proof that the tire economy as demonstrated by Zengel was not accidental.

While there is a limit to the high speed that it is possible to attain in road racing, each year's progress from now on will be shown by greater consistency in winning cars, as cars of like make running close together, and in a minimizing of tire wear and mechanical trouble. In short, stock car road racing has come to be a demonstration of attributes the purchaser may expect in his car.—George M. Dickson, general manager National Motor Vehicle Co.

NOISES THAT SAVE LIFE

New York—Editor Motor Age—In the headlong desire to enforce the suppression of anything that is included, whether legitimately or otherwise, in the category of what the anti-noise societies have been so frequently trying to suppress, there is something of a tendency to condemn some of the anti-danger devices. Unnecessary noise, the misuse of any invention, the temporary torture of the human ear through any unnecessary noise whatsoever ought not only to be condemned, but punished, whenever possible.

One fault with public indignation in this regard is the fact that the anti-noise question is considered too hastily, and not always with the wise discrimination it deserves.

The locomotive's whistle, unnecessarily blown, is something that calls for action on the part of the authorities. On the other hand not one of these same authorities would wish to banish the locomotive whistle altogether.

The same statement is true of motor warning signals. There are some chauffeurs who seem to take keen delight in making the most long-drawn out and unearthly noise possible with the warning signal attached to their cars. In this way wrong impressions have gone out, and the wrathful public, in order to end the nuisance of the erring chauffeurs, now and then, urges the abolition of everything except the soft noted and inconsequental warning signal.

The more deeply this question is investigated the clearer becomes the fact that the motor warning signal necessary to prevent loss of life and limb and to avert collisions is one whose harsh and menacing note can be used in small as well as large volume.

What is known as the electric power horn, with the raucous, commanding note, has accomplished more in the way of life saving than any other device with which the motor car is equipped. Why, then, should it be carelessly included at times among the devices which the anti-noise societies are said to condemn? Any manufacturer of any device ought to be willing to aid in the prosecution of those who misuse it.—A. D.

SCHOOL FOR TRUCK DRIVERS

Indianapolis, Ind.—Editor Motor Age—Realizing that the man on the box has much to do with sustaining the reputation of the truck manufacturer, and in adding to the efficiency of the customer's service, the Mais Motor Truck Co. plans to run a school at its Indianapolis factories. Whenever a customer of ours wants to take advantage of our service, we will be only too glad to have him send his drivers to us, and we will take the time of our experts at the factories to give these men a complete schooling in the construction and handling of our cars. If we can get this man into our plants for a few days, let him see where we build our motors, grind our gears, etc., he will get a practical working knowledge of the truck's construction. This will make him a more valuable man to himself and his employer. While the truck it simple, yet the manner in which it is handled has much to do with its life and service. We find most drivers relish the experience of being taught in our factories and then when they begin to drive the machine for our customers they take a bigger interest and greater pride in the way in which they take care of the car.

The training of the driver is an important factor. A teamster, promoted to the truck, is as a rule a better man than a professional chauffeur. A teamster is used to his company's policy, knows the routes and the stops, also the bad crossings. He is used to heavy hauling and the handling of big loads, and he is not spoiled by being used to mile-a-minute speed in a touring car. A teamster is used to picking out the best places and in getting through congested traffic. As a rule, besides being sober and industrious, the best candidate for the steering wheel should not be younger than 21 nor older than 40.

Too young a man may be reckless and more liable to act up with a car. If he be older than 40 he may be too slow, unadaptable and lacking in enthusiasm. In many concerns using trucks, a bonus is offered at the end of a stated period to the driver who makes the best showing with his car. In others, prizes are offered, which stimulates the drivers to put forth their best endeavor and aids the concern in ascertaining a minimum cost system.

Besides being willing to school drivers at our factories, and sending them out on the road to learn how to operate cars, we furnish all with a book with detailed information about every part of the car. This system makes for a more intelligent and efficient co-operation between factory and consumer.—Will H. Brown, president Mais Motor Truck Co.

Among the Makers and Dealers

NEW MITCHELL BRANCH AT KANSAS CITY, MO.

McCORD Building Again—The McCord Mfg. Co., whose business has grown to enormous proportions since the concern's removal to Detroit, has just let contracts for a one-story brick addition to its plant on the East Grand boulevard.

New Oakland of Novel Design—The first of the Oakland Motor Car Co.'s new cars, known as the Sociable roadster, left the factory in Pontiac last week. Its most unique feature is that it accommodates three persons comfortably in one seat. The car was designed by George E. Daniels, general manager of the company.

Promotion for Markle—Lafayette Markle, who for the past 2 years has been in charge of the Buick interests in Chicago and the territory controlled by the Chicago branch has been appointed general branch manager and superintendent of the E-M-F. Co.'s branches throughout the United States and will make his headquarters in Detroit. H. S. Johnston and C. B. Weaver also of the Buick Motor Co. have joined Mr. Markle and will travel the United States for the E-M-F. Co.

Building in Moline—Contracts for the erection of three buildings have been let by the Root & Van Dervoort Engineering Co., a subsidiary concern of the Moline Automobile Co. of Moline, Ill. This will double the output of the plant. Work on the new buildings has already been commenced. The company is far behind on orders, due to inadequate facilities, and expansion was absolutely necessary. The new buildings are: Assembling building, brick construction, one story high lantern roof, block floor, ground dimensions, 85 by 258; testing and painting building, ground dimensions 70 by 375, one story basement and floor of concrete construction, lantern roof; casting storage building, ground dimensions 70 by 80 feet, one story. After the new buildings are completed assembling work will be carried on in the new building for that purpose instead of the machine shop as is now the case. A large amount of new machinery has been ordered.

Now a New Departure Man—Samuel B. Dusinberre, formerly with the United States Motors Co., has accepted a position as western sales manager for the New Departure Mfg. Co., Bristol, Conn., manufacturer of ball bearings, and will have his headquarters at the Detroit office of this company, 1016-1017 Ford building.

Franklin's 1912 Plans—The factory force of the H. H. Franklin Mfg. Co. of Syracuse, N. Y., is being increased as rapidly as men can be obtained. Skilled mechanics are being taken on in large numbers and during the coming month the present force will be added to by several hundred. Plans for greatly increased production of Franklin air-cooled motor cars are being made in the pleasure car line and in the commercial car department. During the summer numerous changes were made in the arrangement of the machinery in the shops, additional floor space was secured wherever it was possible and facilities for manufacturing were greatly augmented. The annual inventory period, which generally occupies 2 weeks, was this year curtailed to 5 days in order that there might be no break in the manufacturing. The number of commercial cars turned out this year will be many times what it was last year. The 1-ton truck, with its pneumatic tires, will be continued, as will the 1000-pound light delivery car which was introduced in its present form a year ago. The taxicab business has developed rapidly from a Franklin standpoint and production in this line has been behind orders for months. A 2-ton truck is being developed and will be placed on the market as soon as it is ready.

Colby Branch in Chicago—The Colby Motor Co. has opened a branch house at 2009 Michigan avenue, Chicago. The floor space is 25 feet front by 150 feet deep with a repair shop in the rear of the building. The branch will by under the management of H. W. Ogren, formerly of the Logan Auto Garage Co. at 3229 Fullerton avenue.

Another New Case Building—The motor car department of the J. I. Case Threshing Machine Co., Racine, Wis., has started construction work on a new building to replace a large frame structure situated between Twenty-third and Twenty-fourth streets. The new building will be devoted to the painting, trimming and finishing departments and the tinning and sheet metal work will be done there also.

Oakland's 1912 Production—The Oakland Motor Car Co. of Pontiac, Mich., will manufacture between 5,000 and 6,000 of the 1912 model. These figures are the estimate of the production department, and are said to represent the minimum rather than the maximum. According to Manager George E. Daniels there will be no shutdown or layoffs. The large agencies of the company all have been contracted for for the season of 1912, and it is the intention of the company to open a factory branch in New York city.

Change in Packard Representation—The Packard Motor Car Co. of Detroit has bought the business of the Chicago Motor Car Co. heretofore the selling agent of Packard cars at Michigan avenue and Twenty-fourth street, Chicago, and has organized under the laws of Illinois the Packard Motor Car Co. of Chicago, which will continue as an independent corporation handling Packard motor cars. The Chicago Packard company will be under the management of H. M. Allison, who has been secretary of the Chicago Motor Car Co. Mr. Allison will retain his entire sales and service organization the same as heretofore. The Chicago Packard company is a separate corporation from the Packard company of Detroit, and will be responsible for all sales and service work in northern Illinois, northern Indiana, southern Wisconsin and Iowa-Mississippi river territory, Mr. Allison having direct supervision of all sales by sub-dealers and all Packard service in this large territory. The Packard Motor Car Co. of Detroit never has had any branch and it is in

carrying out this policy of the Packard company that the Packard Motor Car Co. of Chicago has been organized as a distinct corporation in this territory.

Low Rates Granted—Manufacturers of motor vehicles are granted the lowest rates of all in the list arranged by the Employers' Mutual Liability Insurance Co. of Wisconsin, organized to insure manufacturers against the hazards of the new workingmen's compensation or industrial insurance act passed by the Wisconsin legislature and now in force. The rate per $100 of wages is fixed in a large number of cases and for motor manufacturers it is 67 cents for class A, 75 cents for class B, and 84 cents for class C. The next lowest class pays 66 2-3 per cent more.

Two Shows for Boston—It is a settled fact now that Boston is to have two distinct motor shows, one for pleasure cars and the other for commercial vehicles. Some time ago the Boston Commercial Motor Vehicle Association voted that it would conduct such a show, but there was some talk about a change. The sending out of the application blanks for the regular pleasure car show, however, makes it clear that there will be a second exhibition, for no provision is made for commercial vehicles. The pleasure cars will be exhibited in Mechanic's building during the week of March 2-9, 1912, this being the regular period that the Boston Automobile Dealers' Association holds its show. Then the week following the Boston Commercial Motor Vehicle Association will have its exhibition. As many of the dealers are members of both associations it will be an easy matter to turn from one show to another, and Chester I. Campbell, who manages the motor exhibitions here each year will be the man in charge of both next March. For the pleasure car show the diagrams provide for about 114,000 square feet of space, but that amount will not be needed for the commercial show. With no business vehicles in the pleasure section it will allow a great many more exhibitors this season. The extra week for the commercial vehicles will now allow all types of wagons and trucks to be displayed, too, which was not possible in the past.

Hupmobile in England—William Truscott and E. E. Hipwell, representatives of Whitings, Limited, London agents for the Hup Motor Car Co., returned last week to England after having closed a contract to represent the Hupmobile throughout Great Britain for another year.

Calls Attention to Beloit—The Commercial Club of Beloit, Wis., will make a tender to the United States Motor Co. to choose Beloit as the location of a factory for the manufacture of parts for old models, which the United States company proposes to establish in the middle west.

Chicago Cadillac Agent Building—The Cadillac Automobile Co. of Illinois, Chicago representative of the Cadillac, was one of the first to build in the southern end of the row, but already it is discovered that the quarters are too small. This has led to the decision to erect a new five-story building at the northwest corner of Michigan avenue and Twenty-third street, opposite the Thomas branch. It is expected the new building will be completed by January. The lot is 75 by 165 feet and the Cadillac has a twenty-year lease. The investment in the new plant will total $275,000.

New Mais Officials—At a meeting of the Mais Motor Truck Co., H. W. Moore was appointed assistant treasurer. He has established his offices at the Mais downtown offices in North Capitol avenue. Other members of the accounting department have been transferred from the factory to the central offices. Will H. Brown, the president, will divide his time between the downtown offices and the factories. Mr. Moore formerly was cashier of the Capital National Bank of Indianapolis. The directors appointed for the ensuing year are: John Saulter, Dr. A. E. Sterne, A. W. Markham, C. L. Chandler, W. H. Roberts and Albert Mais. Plans are under way for the enlargement of the factory buildings to care for the steady increase in business.

UNITED STATES TIRE CO.'S NEW YORK OFFICE BUILDING

A Philadelphia Change—The United States Motor Co. has purchased the salesroom and service building at 216-218-220 North Broad street, Philadelphia, formerly occupied by the Packard Motor Car Co. Immediate possession will be taken by the United Motor Philadelphia Co., which is the Quaker city branch of the United States Motor Co. It will become the home of the Columbia-Knight and Maxwell cars as well as Sampson freight and delivery motors. The floor space will be four times as great as in the present location of the company at 207 North Broad street.

Sheldon Opens Detroit Office—The Sheldon Axle Co., of Wilkes-Barre, Pa., has opened a branch office at 1215 Woodward avenue, Detroit. The following men will work from the Detroit office: Mr. C. H. Gleason, who will take care of trade in northwestern Ohio and western Michigan; W. M. Hogle until recently an engineer with the Alden Sampson Co. who will act as sales engineer at Detroit, and take care of the axle business for Detroit and its suburbs, also eastern Ohio; David Landau, who will be consulting spring engineer. There will also be located at this office a regular spring engineer and draftsman and a draftsman for commercial axle vehicle work.

COLBY'S FIRST SHIPMENT TO AUSTRALIA

BRIEF BUSINESS ANNOUNCEMENTS

ZIONVILLE, IND.—Marion & Stultz, Zionsville, Ind., have taken on the Cole line for 1912.

Milwaukee, Wis.—The Smith-Hoppe Auto Co. will handle the Oakland in Milwaukee and vicinity.

Denver, Colo.—The Mead Autocycle Co., 1374 Broadway, has taken the agency for the White.

Boston, Mass.—Simeon H. Baker has entered the commercial field and is now a member for the sales force of the Decatur truck branch.

Louisville, Ky.—The Wilder Motor Car Co., the latest comer in the Louisville trade, has taken the agency for the Everitt car in Kentucky.

Spokane, Wash.—Harry Olive, formerly connected with Norman Church, southern California Stoddard-Dayton distributor, hereafter will handle the Overland in Spokane.

Evansville, Ind.—Harry P. Mammen of Evansville, Ind., has been appointed sales manager for Cole cars in eastern Indiana and western Ohio. He is connected with the Henderson Motor Sales Co., Indianapolis.

Toledo, O.—The McLeary Engineering Co. has closed a deal which gives it the exclusive selling rights in Toledo territory on the Mais motor truck. X. D. Johnson, formerly with the Croxton-Keeton company, will have charge of the motor car department of the company.

Indianapolis, Ind.—A. E. Creeger has been installed as manager of the new factory sales branch of the White Co. in Indianapolis. The Archey-Atkins Co. of Indianapolis has been appointed agent for the Hudson, succeeding the agency held by the Indiana Automobile Co., which has taken on the Reo.

San Francisco, Cal.—Two more cars are to be represented in San Francisco. The Pathfinder and Parry are the new entries. They will be handled in San Francisco by the Motor Car Manufacturers' Sales Agency. The new agent will use San Francisco as its distributing point for the northern part of California, which territory will be under its supervision.

Milwaukee, Wis.—The Rambler garage at 455-457-459 Broadway will cease to be a public garage as soon as Alfred Reeke, sales manager of the Milwaukee branch of the Thomas B. Jeffery Co., is able to make the arrangement. The Milwaukee branch has closed out its entire stock of supplies and accessories. The changes are made to follow out the policy of the Kenosha company to make all of its branches Rambler service stations exclusively, with no side lines such as a public garage business or accessory and supply store to interfere with the proper handling of Rambler business.

Washington, D. C.—J. H. Ebersole, 1521 Fourteenth street N. W., has secured the agency for the Stutz.

Milwaukee, Wis.—A. McNeil, 161 Michigan street, has been appointed distributor of the Liberty-Brush.

Columbus, O.—H. R. Leach & Co., located in the Exchange building on Taylor avenue, has taken the central Ohio agency for the Lambert trucks.

Portland, Ore.—E. W. Vogler, president of the Northwest Auto Co., had added another agency to his long list. His latest acquisition is the Stearns.

Columbus, O.—Harry Joseph, who operated a livery stable at the corner of Champion avenue and Oak street for years, has reconstructed the building into a modern garage.

Seattle, Wash.—The United States Tire Co. now is located in Seattle, having opened temporary offices and display rooms at 706-8 East Pike. A. H. Jones is the manager.

Louisville, Ky.—The United States Tire Co. will open a wholesale branch in this city at 904-906 South Third avenue. The business will be in charge of H. G. Moesta, of Detroit.

Boston, Mass.—Stanley G. Martin is now in charge of the Decatur truck branch in Boston, and he has had the business moved to the new maintenance department the company has opened in Cambridge.

Milwaukee, Wis.—The Stegman Motor Car Co. of Milwaukee, manufacturing the Stegeman truck, has appointed the Schreiber Motor Car Co., 180 Fifth street, as western distributor and local representative.

San Francisco, Cal.—John W. Swan, who for the past 3 years has been connected with the Leon Shettler company of Los Angeles, has taken the position of sales manager for the Reo Pacific Co. in San Francisco.

Detroit, Mich.—Harry Paxton and A. A. Crumley, both of whom are well known in local motor car circles, will go to Philadelphia as eastern distributors for the Warren Motor Car Co. They will do business under the style of the Paxton-Crumley Auto Co.

De Kalb, Ill.—Clinton F. Cook, who for the past 4 years has been associated with C. B. Broughton in the general garage business, has purchased the interests of C. B. Broughton and hereafter will conduct the garage under the name of the West End garage. Broughton will maintain a show and sales room in the garage and will continue handling Buick cars in the greater part of DeKalb county.

Denver, Colo.—The McDuffee Motor Co. has taken the agency for the Stearns.

Denver, Colo.—Mann & Aldrich are now Colorado distributors for the Dorian rim.

Detroit, Mich.—The Cartercar Co. is now occupying its new building at Woodward and Hendrie avenues.

Jeffersonville, Ky.—C. C. Peel of Jeffersonville has taken the agency for the Hupmobile in that vicinity.

Louisville, Ky.—The Racine Auto Tire Co., formerly located at 647 South Fourth avenue, has moved its salesroom to Third avenue, near Breckinridge street.

Portland, Ore.—The Braly-Du Bois Automobile Co., Portland agent for the Franklin line, has opened its new quarters on North Nineteenth street.

Columbus, O.—J. B. Hoover, who has been operating a stamping works and machine shop at 619-621 North High street, has taken the central Ohio agency for the Nyberg cars.

St. Louis, Mo.—A change of Missouri distributors for the Cole line for 1912 has been made, the General Motor Car Co., 3952 Olive street, St. Louis, being the new representative.

Chicago—The Federal Motor Car Co., 2337 Michigan avenue, has taken over the Warren-Detroit agency, which it will handle in conjunction with the Herreshoff, giving up the Enger.

San Francisco, Cal.—The United States Tire Co. has opened temporary quarters at 414 Van Ness avenue. A new building is being erected for this company at 636-646 Van Ness avenue.

St. Louis, Mo.—The Universal Motor Truck Co. announces the appointment of the Lindsay Motor Car Co., 3327 Locust street, as distributor for Universal trucks in the St. Louis territory.

Spokane, Wash.—The Consolidated Motor Car Co. has succeeded the Pyther-Tyler Co. in the handling of the White pleasure vehicles and trucks. The Hupmobile has been added to the White.

Atlanta, Ga.—The Long-Henderson Co., 226 Peachtree street, distributor for the Cole in the southeastern section of the United States, has changed its name to the Cole Motor Co. of Georgia.

Portland, Ore.—Heretofore the Ford agency has been a co-partnership between A. J. Edwards and C. Aerne, Jr. Mr. Edwards purchased Mr. Aerne's interest recently and has formed a stock company of the concern, which will be known as the Ford Motor Car Co., Inc. D. B. Parks will be president, A. J. Edwards, secretary

and manager, and M. Peterson, vice-president. The capitalization will be $20,000.

Philadelphia, Pa.—The Jackson-Marion Sales Co., 634 North Broad street, has closed for the Stutz agency.

Denver, Colo.—The Western Marion Motor Co., 1516 Broadway, has taken the Abbott-Detroit agency for Denver.

Reading, Pa.—The Park garage, agent for the Cole line in Reading, Pa., has moved to new quarters at Eighteenth street and Perkiomen avenue.

Toledo, O.—H. P. Robinson of Toledo has been placed in charge of the general agency of the Packard Motor Truck Co., with headquarters at Milwaukee, Wis.

Milwaukee, Wis. — The Schreiber Motor Car Co., Milwaukee, Wis., has been appointed general distributor for Wisconsin and the central western states of the Stegeman motor truck.

Washington, D. C.—W. W. Gibbs, formerly with the United Motor Washington Co., has been appointed agent for the Brush and Crawford. He will be located at the Standard garage, 2121 Fourteenth street.

Denver, Colo.—The Goodyear Tire and Rubber Co. opens early this month a branch office at 1562 Broadway. About $5,000 will be spent in remodeling the store and placing fixtures and office fittings. S. E. Gillard will be in charge of the agency.

Neillsville, Wis.—The L. H. Howard garage has been purchased by a syndicate of local motorists, who have organized the Neillsville Garage Co. Charles Decker is president and manager and W. L. Smith is secretary.

Washington, D. C.—W. P. Barnhart, formerly district manager for the Metzger Motor Car Co. in New England, has taken the Everitt agency in this city. He has taken quarters with Earle & Allen, agents for the Hupp-Yeats, at 1610 Fourteenth street, N. W.

Indianapolis, Md.—New Cole agencies are announced, as follows: W. W. Whitney, Lynn, Mass.; George W. Creswell, Lancaster, Pa.; Smith Implement Co., Worthington, Minn.; Thomas Richer, 1112 Ludington street, Escanaba, Mich., and Fred J. Nierstheiner, Gibson City, Ill.

Boston, Mass.—George W. Houk, manager of the New England branch of the Oldsmobile company, with headquarters in Boston, has resigned and his successor is W. B. Fewell, who came on here from the west. Mr. Houk has not decided on his future plans, but he is considering an offer to go to London to manage a branch there.

Spokane, Wash.—The Standard Motor Car Co., for 2 years past one of the most important motor car distributors in Spokane, closed its doors last week. The Stoddard-Dayton, the line handled by the Standard company, has been taken over by the C. H. Hornburg Auto Co., which handles the Maxwell. The Standard quarters at 814 Second avenue have been invaded by the Consolidated Motor Car Co.

Stevens Point, Wis.—The Auto Sales Co., of Stevens Point, Wis., soon to be incorporated, has begun the erection of a new garage, 36 by 90 feet in dimensions.

Jefferson, Wis.—The Jefferson Promoters' Club is negotiating with the Waverly Motor Co. of Milwaukee to locate its proposed new motor works at Jefferson.

Spokane, Wash.—Vance Wolverton, C. E. Lane and J. A. Munson are associated together in the Spokane Everitt Motor Co., the latest invader of Spokane's row.

Boston, Mass.—The Hollander Automobile Co. has opened salesrooms at 169 Huntington avenue, where it is handling the Metz. The local agency has the New England field for this make.

Alma, Mich.—Fred H. Rowland has tendered his resignation as cashier of the Alma State Savings Bank and has formed a partnership with A. C. Wyant as Wyant & Rowland, to handle motor cars.

Boston, Mass.—Arthur G. Johnson, formerly with D. P. Nichols & Co., when it handled the Frayer-Miller trucks, now is sales manager of the Eastern Motor Truck Co., distributor for the Kelly truck.

Chicopee Falls, Mass.—Among those who have recently joined the Stevens-Duryea organization is O. C. Curtis, who formerly represented the Franklin in the south. Mr. Curtis will represent the Stevens-Duryea in southern territory.

Boston, Mass.—Charles G. Andrews and M. A. Dykeman have formed a partnership as Andrews, Dykeman & Co., to handle the Moon cars in the Hub. Mr. Andrews has had the Moon as a sub agency, but the new firm will have the entire New England territory. Salesrooms have been secured in the motor mart, Park square, formerly used by the Alco and Stoddard-Dayton agencies.

Indianapolis, Md.—The Empire Motor Car Co. has arranged for a new foreign agency in Japan, where its interests will be represented by T. Laffin, of Yokohama.

Amesbury, Mass.—The Graves & Congdon Co. of Amesbury, Mass., manufacturer of the Luxury folding seat, has been reorganized, and hereafter will be known as the Hodge & Graves Co., Amesbury, Mass.

Delaware, O.—D. F. Boston of Bowling Green, has opened a vulcanizing plant in the Pickering block in this city. Boston had been conducting a similar business in Bowling Green, but sold out to open the shop in Delaware.

Columbus, O.—The Main estate has begun the construction of a large garage in the rear of the Neil house, Columbus, which will be leased to an operating company, to be announced later. The garage will be 63 by 96 feet.

Washington, D. C.—W. C. Vliet, formerly assistant sales manager with the Chicago branch of the Buick Motor Co., has been appointed branch manager of the E-M-F and Flanders lines, with headquarters in Washington.

Detroit, Mich.—P. W. Hood, formerly western representative of the American Distributing Co., has taken up his duties with the Timken Detroit Axle Co., of Detroit, Mich., and the Timken Roller Bearing Co., of Canton, Ohio, as a sales representative and probably will operate in Chicago territory.

Detroit, Mich.—A. K. McCluny, formerly connected with the Buick Motor Co., has been appointed district representative for the Westcott cars, having charge of the states of Michigan, northern Indiana and northern Ohio. McCluny will make his headquarters at Detroit.

Seattle, Wash.—A factory branch will be established in Seattle which will be in charge of George E. Johnson, handling the Mitchell cars. The new branch will continue in the same quarters that the Osen & Hunter Auto Co. has been occupying on Broadway & East Pike street.

New York.—Among recently incorporated firms has been incorporated the Hexter Motor Truck Co., of New York city, metropolitan distributor of the Gramm truck, with temporary headquarters at 103 West Forty-first street. Plans are under way for the erection of a complete service garage to take care of the metropolitan owners of Gramm trucks.

Boston, Mass.—W. M. Jenkins & Co., who have handled the Mitchell cars in Boston for several years since the car was first sold here, is no longer handling that line, and there is a great deal of speculation going on as to who is going to have it. The latest rumor says that the Harris company of Providence is to have it and move its main office to Boston.

Recent Incorporations

Indianapolis, Ind.—Auto Lighting and Electric Co., capital stock $3,000; to manufacture and sell electric lighting systems; incorporator, G. S. Montfort.

Anderson, Ind.—J. H. Cloud Top Co., capital stock $10,000; to manufacture and sell motor car accessories; incorporator, J. H. Cloud.

Montpelier, Ind.—Automobile and Supply Co., capital stock $5,000; to deal in motor cars and supplies; incorporator, E. E. Helm.

Altoona, Pa.—Vulcan Motor Supply Co., capital stock $10,000; to buy and sell motor cars, repairing same, etc.; incorporators, J. G. Tate, Frank H. Seely, Jr., H. T. Slater, A. E. Mower and M. Greenwood.

Philadelphia, Pa.—Philadelphia Truck Co., capital stock $10,000; to manufacture motor cars, vehicles, etc.; incorporators, Samuel S. Eveland, Roger W. Griswold and William M. Baldwin.

Philadelphia, Pa.—J. M. Shock Absorber Co., capital stock $5,000; to manufacture and sell shock absorbers; incorporators, L. P. Jaquet, Camille A. Contal, Felix Henri Petitmaire and Louis F. Couche.

Columbus, O.—Wise-Green Motor Car Co., capital stock $25,000; to assemble and deal in motor cars, conduct garage, etc.; incorporators, Richard S. Wise, George M. Green, Howard B. Fawcett, Joseph M. Blake and Charles T. Carlson.

Cleveland, O.—Jopson Brothers Co., capital stock $5,000; to deal in motor cars, etc.; incorporators, James E. Payne, Peter G. Jepson, Anna D. Jepson, Richard J. Jepson and Minnie A. Jepson.

The Realm of the Commercial Car

BOSTON DELAYS BUYING

FROM all appearances now the Boston fire department will not be modernized by the addition of motor apparatus until 1913. Following Mayor Fitzgerald's return to Boston from abroad the Boston finance commission sent in a recommendation that called for more firemen and more apparatus, the latter to be of the motor variety. The recommendation suggested that the mayor and the city auditor transfer from the reserve to the appropriation for the fire department the sum of $193,000, of which $175,000 was to be used for the purchase of motor fire apparatus. The recommendation further said that the fact that the apparatus is to be of the motor instead of horse-drawn variety made no difference in the policy of appropriating money for its purchase. In sending in the statement the finance commission based its estimates upon what Fire Commissioner Charles Daly submitted to it.

The mayor, however, desires that a special commission investigate the needs of the department and report to the legislature. Under the mayor's present plan here is the way it will work out, it is figured by Bostonians: His commission may investigate matters and find out nothing more than what is already known —that Boston needs more apparatus. The commission may decide that the number of pieces may be different from what Fire Commissioner Daly recommends. A bill will be sent to the next legislature which meets in January. The committee will have its hearings along about March. By June perhaps a bill will be passed authorizing the purchase of apparatus. Before that time the fire department budget will be made up and passed, but it will not contain the amount for motor apparatus, as that will be an uncertainty. Finally bids will be asked and along about the beginning of 1913 some of the apparatus may be in operation, a delay of more than a year.

TRUCKS AS FRUIT CARRIERS

Orlando Moore of Visalia, owner of a 3-ton Kissel truck, drove the car, loaded with 7,240 pounds of grapes, from Globe, situated 12 miles east of Porterville, to San Francisco, in 31 hours, a distance of 315 miles. The grapes are from the vineyard of T. S. Grider. The trip was made as a demonstration to ascertain if grapes could be hauled successfully with motor trucks without bruising them. The route was over some very rough roads, especially between Fresno and Los Banos and over the Pacheco pass. With an average of 10 miles an hour running time, the grapes were not damaged in the least. This information should be valuable to the many fruit growers who are skeptical as to the use of motor trucks for their hauling. Moore has owned this truck about 60 days, never operated one before, and made this trip without any expense for repairs or delays. He carried an overload of 1,870 pounds, which included three men.

IN MILK SERVICE

An excellent example of the efficiency of the motor truck in displacing horses is being given by the C. Brigham Co. of Boston, a big milk contractor, that is now using a 5-ton Pierce-Arrow truck. The truck is being used to transport milk between Boston and Nantasket, and it is kept in service practically 24 hours a day, the motor scarcely having had time to cool since it was put in service 6 weeks ago. Under the former system the company with horses transported its milk from its depot to the Nantasket steamer and had to pay freight on it to the wharf at the Nantasket end of the line. Then other teams brought it to the customers. Now the truck makes the entire trip over the road about 20 miles carrying from 5½ to 6 tons of milk on each trip. The truck saves the time consumed in loading and unloading on the boat; gets the milk down to Nantasket more quickly and displaces 12 horses and nearly as many men, one man looking after the care of the milk on its journey. In 6 weeks the truck has covered 3,500 miles without a single adjustment.

GRAND RAPIDS PLACES AN ORDER

Following its general policy of substituting motor-driven fire apparatus for the old style pulled by horses, the board of police and fire commissioners of Grand Rapids, Mich., has awarded the contract for a new motor hosecart to the Seagrave company of Columbus, Ohio. The Michigan Hearse and Carriage Co. of Grand Rapids now is engaged in constructing the bodies for two motor chemicals to be installed at No. 1 and No. 3 engine houses. At No. 5 engine house there is a combination chemical, hosecart and truck, Battalion Chief Walker has an official runabout, and the board is figuring on letting a contract for a hook and ladder truck. It is the policy of the board to purchase the chassis from the car manufacturer and then have the body made in Grand Rapids according to specifications made by the board. The police department at present has a motor-driven ambulance and patrol.

COMMER'S LATEST DEMONSTRATION

The first of the Commer trucks purchased by the Pioneer storage warehouses of Brooklyn, N. Y., was given an ititial service run somewhat out of the ordinary. Two days after its delivery by Wyckoff, Church & Partridge, of New York, the truck was sent on a night journey from the Pioneer warehouses in Brooklyn to Philadelphia, 115 miles distant, the order calling for a prompt delivery of a load of household goods to a Philadelphia patron, on the morning of September 7. The fully-loaded Commer left Brooklyn at midnight, September 6, arriving at its destination at 9 in the morning, two stops being made on the way. The truck on its return left Philadelphia at 2 in the afternoon, arriving at the Brooklyn warehouses at 10 o'clock. Fourteen miles per hour was the average running time for the round trip, and this including stops and the necessary slowing down in towns and cities en route.

The practical possibilities of trucking service between cities was fully demonstrated during this run. Had the goods been turned over to the express or freight companies it would have been necessary to crate them at a considerable expense.

TRUCKS FINISH LONG RUN

The quartet of motor trucks, three Gramms and a Modern, which competed in the Chicago-Detroit endurance run in August and then started east over the road to Boston reached Boston September 8, after a trip of 14 days. It was a really meritorious run for trucks because all four carried the entire loads for which they were designed.

The three Gramms comprised 1, 2 and 5-ton wagons and the Modern was a ¾ ton delivery wagon. The machines were in charge of C. J. Fischer, New England representative for the trucks, who went to Chicago to see how they finished in the endurance run.

Leaving Chicago 2 weeks ago the four trucks headed east by way of Lima, Cleveland, Erie, Buffalo, Rochester, Syracuse and Albany to New York city. The caravan ran into the 7-day rain storm which prevailed in August and as a result they found many of the roads badly washed out. But they kept ploughing along making good time even with the big 5-ton truck.

Stops were made in a number of cities along the way which account for the cars not reaching Boston earlier. From New York they came by way of Springfield and Worcester. At the latter city they were exhibited at the state fair 3 days. The total mileage for them was 1381 miles over the road which together with the 750 of the endurance run made more than 2100. Some idea of the hard word work they were subjected to on the run east may be had when it is known that the 5-ton truck was run steadily 72 hours at one stretch without stopping the motor. Mr. Fischer will keep them in Boston for demonstrating purposes.